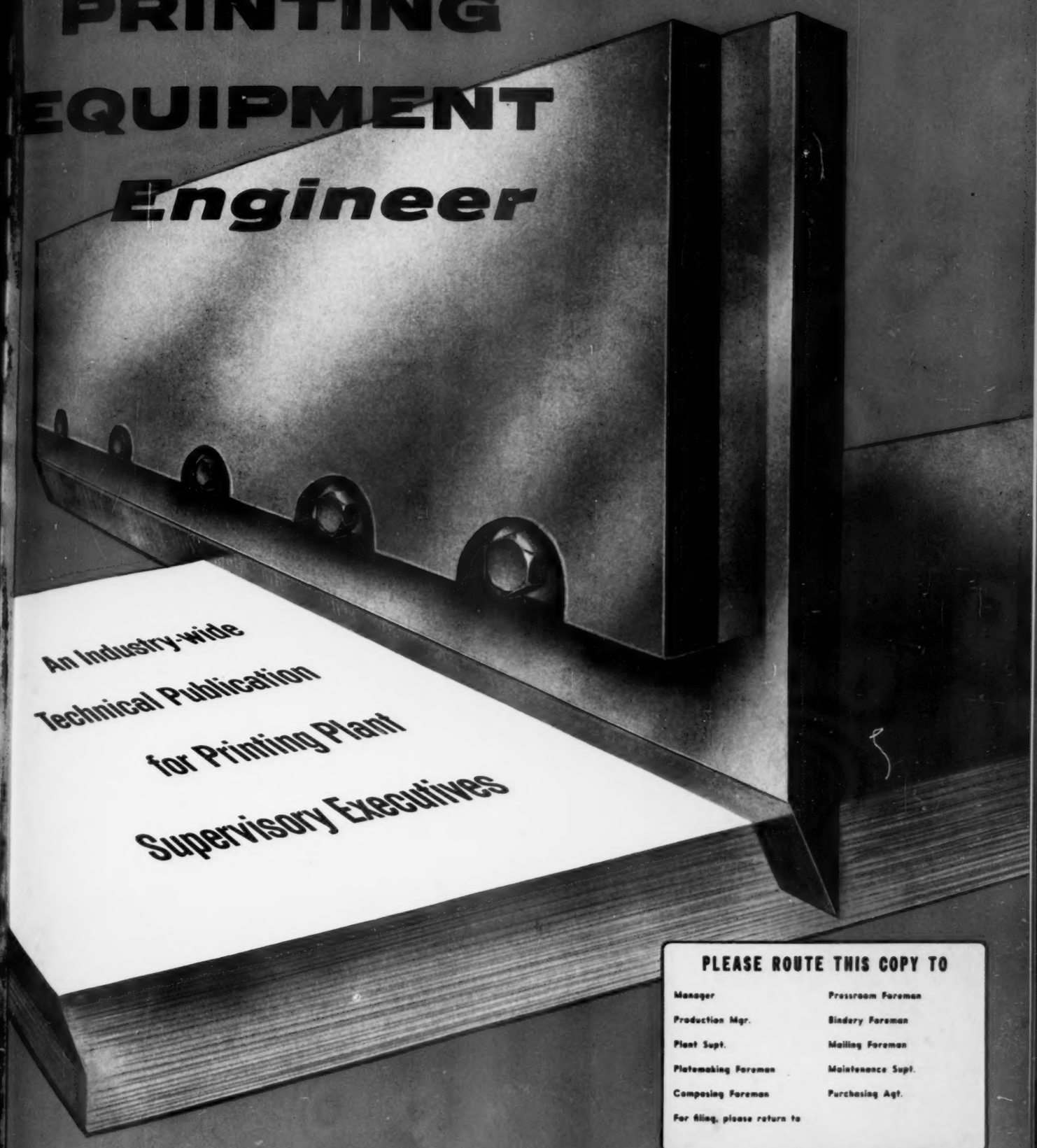
SEPTEMBER 1955

PRINTING EQUIPMENT Engineer



An Industry-wide Technical Publication for Printing Plant Supervisory Executives

PLEASE ROUTE THIS COPY TO

Manager	Pressroom Foreman
Production Mgr.	Bindery Foreman
Plant Supt.	Mailing Foreman
Platemaking Foreman	Maintenance Supt.
Composing Foreman	Purchasing Agt.

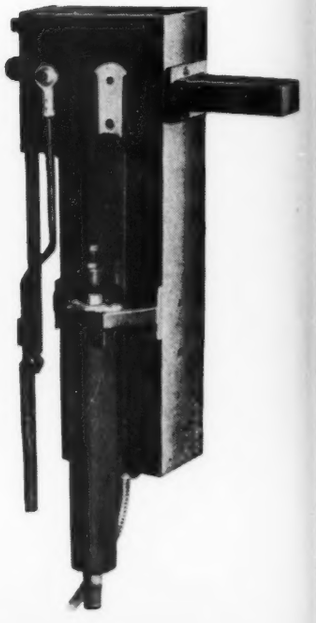
For filing, please return to

LP-2909

only ONE SHIFT to install a Star Selecto-Matic Quadder?

Yes, it's true, the Star Selecto-Matic Quadder CAN be installed in just 8 hours . . . no need, with today's high composing room costs, to have your Linotypes or Intertypes out of operation for 2, 3 or more days.

Of course, installation time is an important cost factor, but is only part of the Selecto-Matic story. A short note or post card to us will bring by return mail, our new 8 page brochure which carries complete information on all phases of Star Selecto-Matic Quadder operation. How it automatically quads short lines . . . how it adapts to Teletypesetter operation . . . complete information on the famous memory circuit . . . all about its single line hydraulic unit . . . and much, much more. Don't fail, write for the brochure today.



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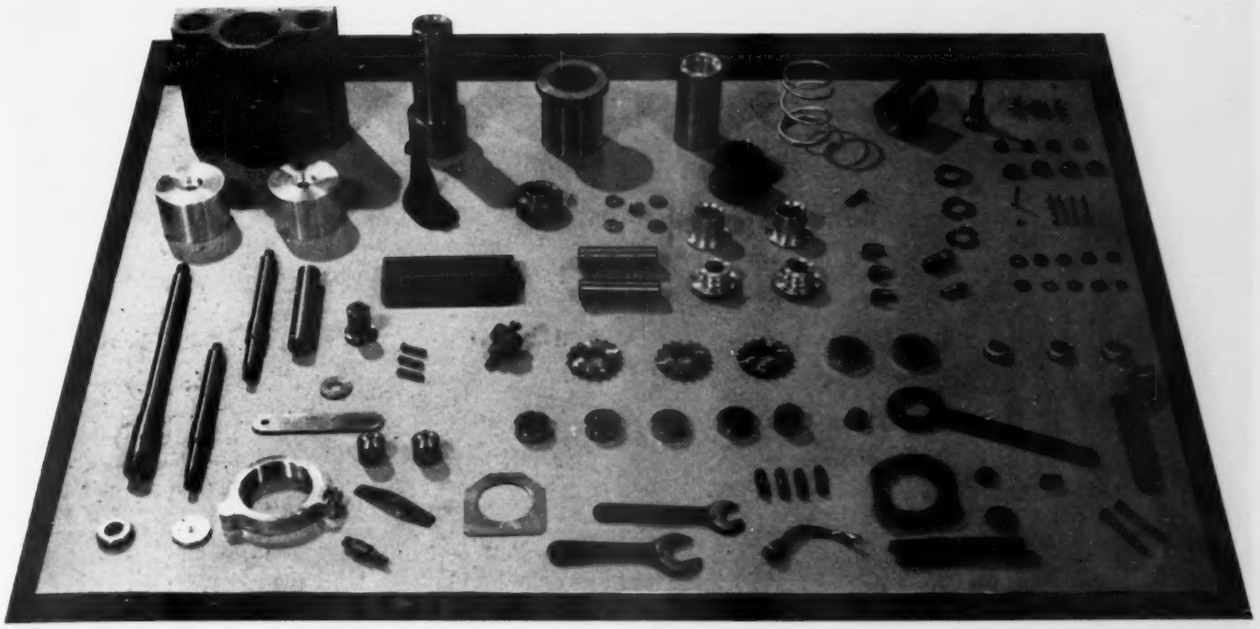
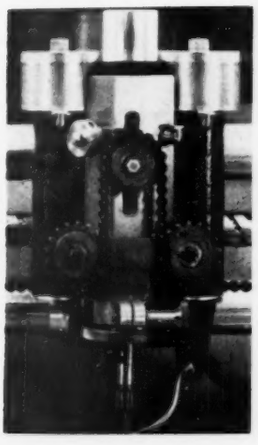
LINOTYPE PARTS *Company, inc.*

SOUTH HACKENSACK, N. J.

All these parts go into the "heart" of the Sta-Hi Master Router...





The "heart" of this precision built curved router is its "head"—the Sta-Hi designed head that speeds a cutting bit at more than 13,000 r.p.m. for fast, accurate tooling of newspaper color plates.

The 133 parts pictured above, finely machined to close tolerances, are typical of the quality construction of the entire machine.

Satisfied users of the Master Router, and they number in the hundreds, testify that such craftsmanship in manufacture "pays off"—in cleaner, sharper color printing and a saving in production time and expense.

The Sta-Hi Master Router is a self-contained "router room", completely **enclosed** for safe, clean, quiet operation . . . And it has these exclusive features:

Power Driven Traverse Feed for rapid, effortless "stripping" . . . **Double Page Matcher** for machining the edges of two single plates for a perfectly "blended" double truck . . . **Air Jet Chip Remover** to keep the plate free from clogging metal particles . . . (In place of the Matcher, the machine can be furnished with a **Dual Cylinder** to route plates of two different sizes.)

If you are running color, or plan to do so soon, you need the **very best** in routing equipment! A lot of discerning newspaper production executives tell us the Sta-Hi Master Router merits that distinction . . . May we tell you more?

STA-HI ...your best buy

STA-HI CORPORATION, WHITTIER, CALIFORNIA

Today—

COLOR

One Example of Equipment for Variable Color Page Location

The above diagram shows a press equipped to enable any two adjacent units to print 4 colors on either side of one web and allowing the turning over of one-half of the web when desired to vary the color page location.

FOR more than 60 years Scott has been designing and building newspaper color printing equipment. The fruits of this continuous development are readily apparent in the many superior mechanical features exclusive with Scott Presses.

The illustration above is a splendid example of the simplicity in design and convenience of operation of Scott Reversible Drives — a simple flip of a lever outside the gear box does the trick!

All gears are always in correct mesh. The flexibility of Scott Press units in combination, to enable wide selection of color page location, derives from long experience in the development of color press equipment.

And so it goes, through a long list of features, with sound mechanical design and sturdy construction, assuring long, satisfactory service and quality printing from every unit of Scott equipment.

★ *A New Fully Descriptive Brochure is YOURS for the asking* ★

Buy with CONFIDENCE - - - Buy SCOTT

WALTER SCOTT & CO., INC.

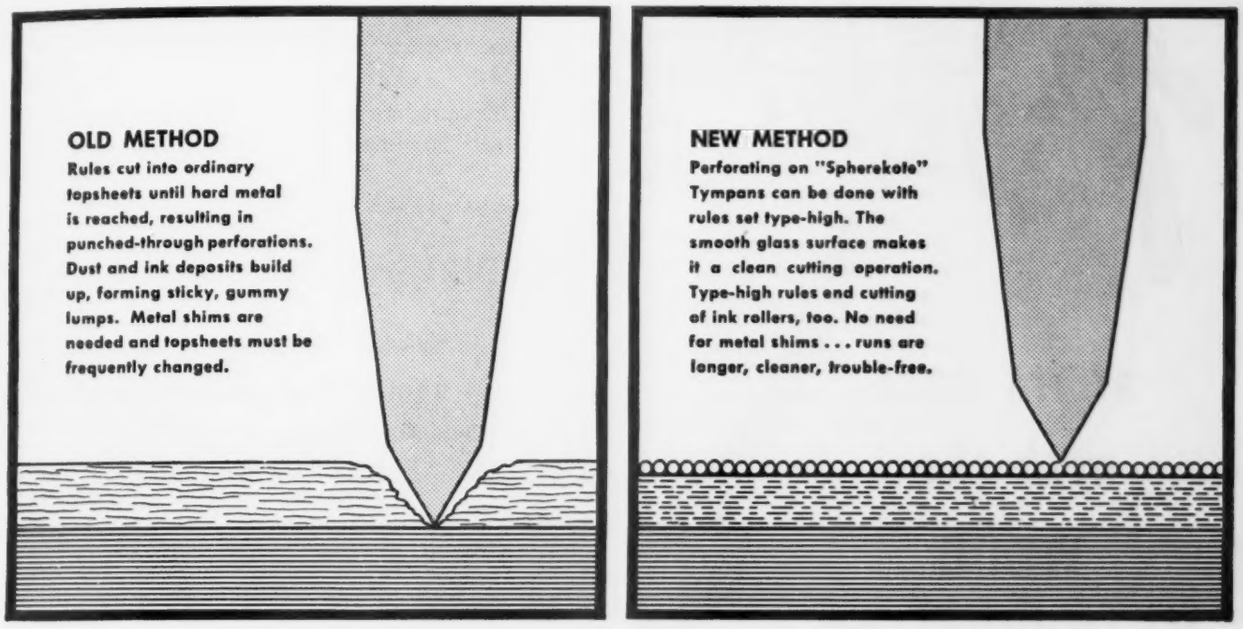
PLAINFIELD, NEW JERSEY

5-54-1

QUICK FACTS ON "SPHEREKOTE" TYMPAN COVERS

- **PERFORATE** without metal shims
- **PERFORATE** right up to the line of type
- Eliminate **LUMPING** and **INK BUILD-UP**
- Get **FLATTER PILES** on perforating runs
- Run **NUMBERING JOBS** without chewing topsheets
- Schedule **QUICK BACK-UPS** without smudging
- Reduce **STATIC** on sensitive stocks
- Allow **WASHUPS** without softening packing

The Glass Surface Makes The Difference


OLD METHOD
Rules cut into ordinary topsheets until hard metal is reached, resulting in punched-through perforations. Dust and ink deposits build up, forming sticky, gummy lumps. Metal shims are needed and topsheets must be frequently changed.
NEW METHOD
Perforating on "Spherekote" Tympans can be done with rules set type-high. The smooth glass surface makes it a clean cutting operation. Type-high rules end cutting of ink rollers, too. No need for metal shims . . . runs are longer, cleaner, trouble-free.

Now! An "all-day" tympan cover for press perforating . . . 15-D "Spherekote" Tympans

Tough 15-D "Spherekote" Tympan Covers get press perforating jobs off to a fast start . . . and keeps them going all day long without topsheet changes. 15-D Tympans are built to take it, to give you longer, cleaner press runs and save expensive press downtime.

Millions of tiny glass beads on the surface of "Spherekote" 15-D Tympan Covers make a smooth, hard surface that makes press perforating faster and cleaner. No more metal shims, no more punched-through perforating jobs. Rules can be set type-high with 15-D topsheets for cleaner cuts and faster runs.

Try "Spherekote" 15-D Tympan Covers in your shop soon. Prove their money-saving advantages to yourself right on *your own presses!* For more information and to arrange for a FREE demonstration write today to: Minnesota Mining & Manufacturing Company, Dept. FM-95, St. Paul 6, Minnesota.

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Made by Minnesota Mining & Mfg. Co., St. Paul 6, Minnesota.
General Export: 99 Park Avenue, New York 16, N. Y. In Canada: P. O. Box 757, London, Ontario.

Color Printing

at its best with the

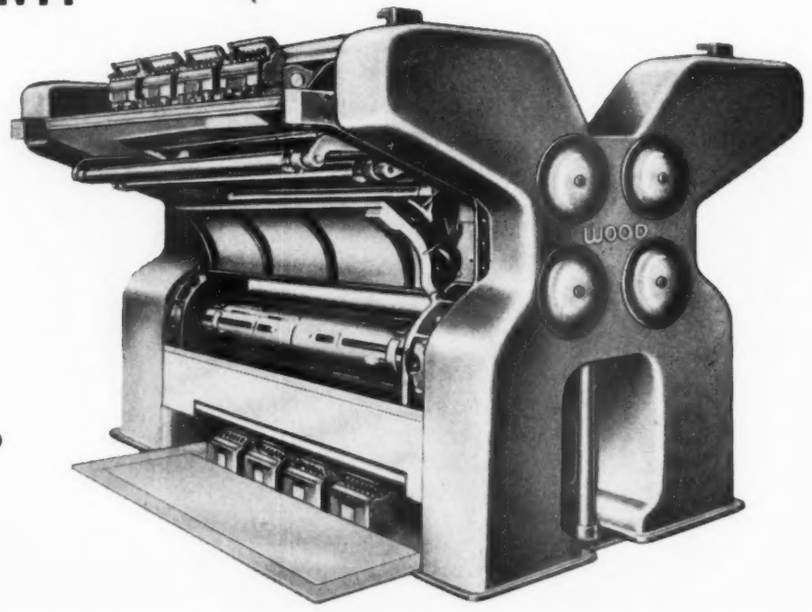
WOOD METROPOLITAN 4-COLOR UNIT

Your pressmen's job can be made easier with the WOOD Metropolitan 4-Color unit. Here is clean styling, proved engineering and precision workmanship that provides facilities for color printing that set a new high standard of quality.

The many outstanding features of WOOD color units commend themselves to publishers who want "top" quality color printing in every edition. WOOD 4-Color units give more than mere "satisfaction" because they produce everything you might expect from a truly fine printing press.

FEATURES

- Minimum back-lash—better register
- Adaptable for use with standard black and white units
- Reliable and Economical
- Completely accessible for easy servicing
- Utmost compactness
- Greater flexibility—color of your choice
- Low maintenance cost
- Precision workmanship for lasting service.



IF IT'S Wood IT'S GOOD

WOOD NEWSPAPER MACHINERY CORPORATION

PLAINFIELD, NEW JERSEY • Executive & Sales Office: 501 Fifth Avenue, New York 17, N. Y.

September 1955

An industry-wide technical magazine published especially for management, production and mechanical executives responsible for printing production and the specification of equipment and supplies used in the commercial, magazine, private plant and daily newspaper fields.

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Volume 85 **Number 12**

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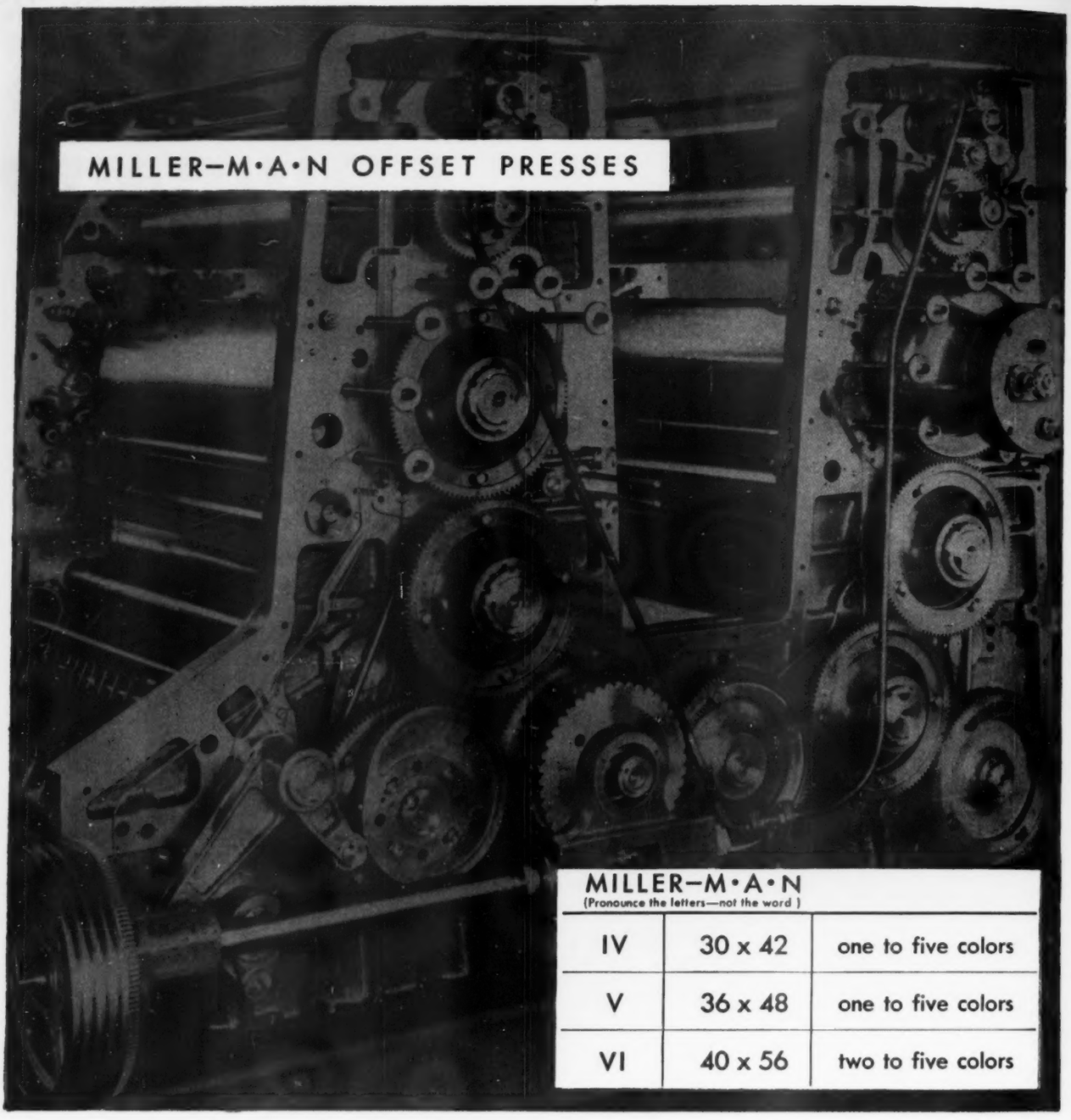


MILLER–M•A•N (Pronounce the letters—not the word)		
IV	30 x 42	one to five colors
V	36 x 48	one to five colors
VI	40 x 56	two to five colors

Streak-free operation

The Miller-M.A.N. Offset Presses have all driving gears outside the press frame. This type of construction not only eliminates gear streaking, but strengthens the impression by making it possible to reduce the distance from the cylinder to its supporting bearings in the frame. Of course, roller supports are also closer, minimizing roller deflection, vibration and shock. This facilitates the laying of a uniform film of ink all over the plate.

Placing the gears, which are helical and ground, outside the frame has the further advantage of permitting the use of the "oil bath" automatic lubrication system which greatly reduces maintenance time and increases press life.

Write for complete details.

miller

MILLER PRINTING MACHINERY CO.
1103 Reedsdale Street, Pittsburgh 33, Pa.

MILLER PRINTING MACHINERY CO. OF CANADA LIMITED, 730 Bay St., Toronto 2, Ontario

The Elrod
for dependable production of leads, slugs, rule, plain border and base material

Ludlow All-Slug Make-up

All-Slug composition enables you to make-up to best advantage. This is true because with all-slug make-up you handle fewer pieces, justification is simplified, assembly of the various units is quick and easy, and the lockup is solid. Reduce the handicaps in your composing room by using the Ludlow All-Slug System

Ludlow Typograph Company 2032 Clybourn Ave., Chicago 14

LOW COST, FULL PAGE

STEREOSAW

The NOLAN Heavy Duty StereoSaw is powerful, smooth operating and offers maximum efficiency. It was designed in cooperation with leading stereotypers to meet the demands of daily newspapers and large printing plants, yet it costs much less than similar saws.

Extra large saw table, 28" x 36" takes a full newspaper page; controls are conveniently located at front of machine; heavy-duty 2-HP motor; double V-belt drive; 10" dia. blade; rugged construction throughout; many safety features.

Write today for complete information on the NOLAN Heavy-Duty StereoSaw to:

NOLAN Corporation ROME, NEW YORK

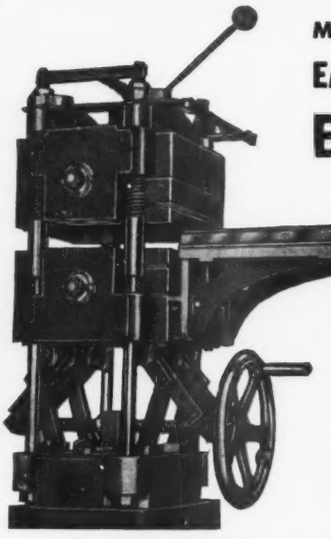
CUT COSTS — PRINT WITH

RUBBER PLATES

MAKE THEM IN THE

EASY-TO-OPERATE

EVA-PRESS



Materials Cost Less Than $1.25 For 10"x10" Plate

1. Insert type form and plastic sheet into hot Eva-Press, apply pressure, let cure for 10 minutes.

2. Release pressure, extract all from Eva-Press and have finished matrix.

3. Place (1) sheet of rubber on (2) matrix and insert both into hot Eva-Press, apply pressure, let vulcanize for 10 minutes.

4. Release pressure, extract all from Eva-Press and have finished Rubber Plate. More detailed directions supplied with Eva-Press.

• PLATENS 11"x13"
• INSIDE CHASE 10"x12"

FOR MORE INFORMATION WRITE TO

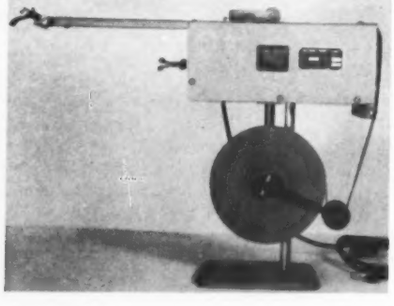
AMERICAN EVATYPE CORPORATION
743 OSTERMAN AVE. DEERFIELD, ILLINOIS

Equipment and Supplies

If you wish additional information concerning equipment, supplies and/or technical literature, please make your request to PRINTING EQUIPMENT Engineer, 1276 West Third St., Cleveland 13, O.

Electronic Tabbing Machine

Electronic Products Div., Post Machinery Co. recently developed a solenoid actuated Tape-Inserter which works in conjunction with a Post Preset Decitron electronic counter. Tape in any length from 1 in. to 6 in. can be slipped between the production items to facilitate rapid visual count and to assist in packaging operations. The device is operated on the solenoid principle and actuated by the Preset counter when desired count is reached. For further details, please mention PEE No. 541 in your request.



Package and Equipment Marking

Feather-Mark Felt Tip Markers, manufactured by Feather-Mark Products Co., are recommended by sponsor for lettering,

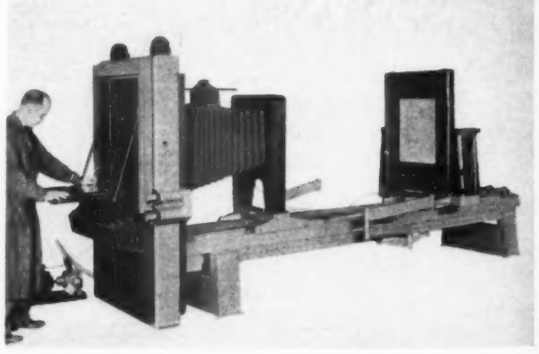
layouts, poster work, labeling and all forms of package and equipment marking. Sponsor states the Feather-Mark Marking Pen writes or draws in any weight lines and leaves indelible marks on marking surfaces including plastic, wax paper, metals and glass. One of the features is a sealed ink cartridge. Liquid is released automatically after cartridge is inserted in the pen. Feather-Mark Marking Pen is furnished in two sizes, the Automatic for heavy use, and the Artful, a pocket clip model. For further details, please mention PEE No. 551 in your request.

Adjustable Loading Ramp

A hydraulically operated 20,000 lb. capacity, adjustable loading dock, designated as Model No. 4 A.F., is now being manufactured by Rowe Methods, Inc. Incorporated into the unit is an automatic safety

(*Continued on Page 14*)

Shooting Star Camera —A new model of the Shooting Star is now in production by Robertson Photo - mechanix, Inc. Designated Shooting Star, Series II, the camera is equipped with a rear case design which eliminates swinging ground glass. Plate bars and vacuum back doors provide elimination mechanisms and storage spaces for each component in the lower portion of the rear case. The frame consists of a welded track of both tubular monorail and bi-rail construction. Copyboard is rotatable. The Shooting Star, Series II, is equipped with the Goerz Red Dot Artar lens, off the floor lamp carriers, three point registration system, positive holder, plate bars, vacuum film holder, flash lamp, glass screen mechanism and elimination device, and electronically driven re-register focusing system with vernier scale settings. For further details, please mention PEE No. 564 in your request.



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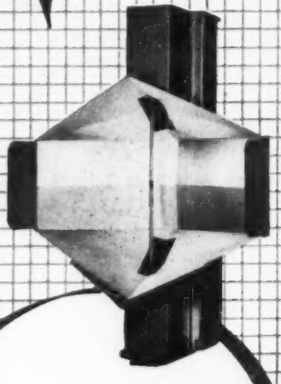

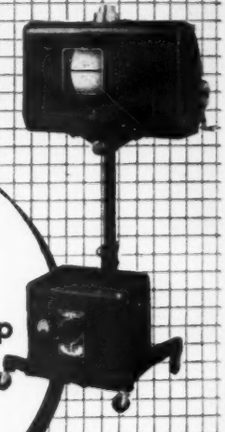

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High Intensity

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For use with
vertical printing frames
40" x 50" and larger.

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Vertical trim;
75 amperes;
23 volt.

Grafarc
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vertical printing frames
under 40" x 50"

Overhead model printing lamps available for use with horizontal printing frames. Burn in normal position, avoiding smoking of reflector and preventing ash from depositing on surfaces in the light path. Models for Monotype Huebner MH photo composing machines assure precise control of intensity for accurate repeats.

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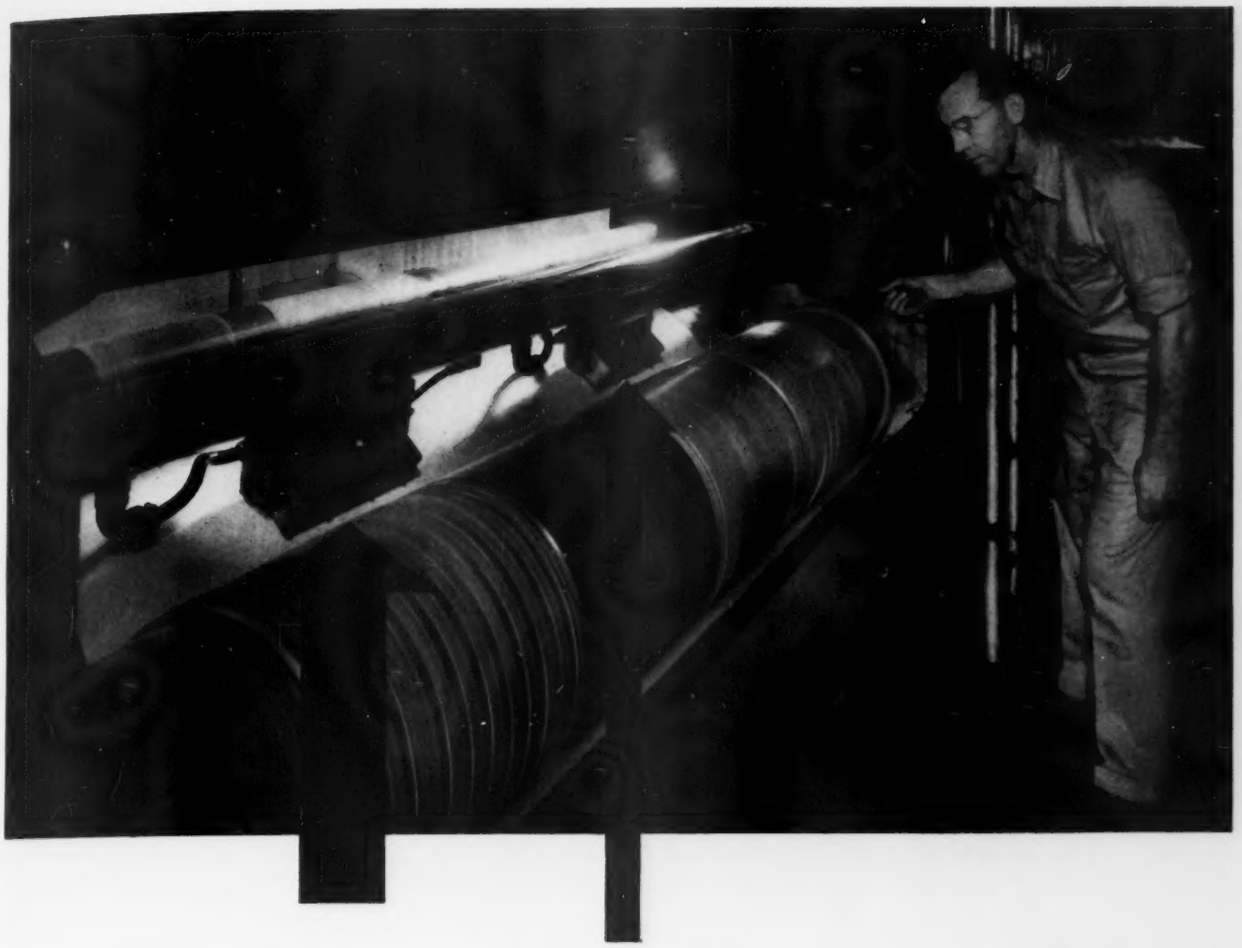


These "eyes" keep ROP color in register AUTOMATICALLY

This is the electronic scanner of a Hurletron Automatic Color Register Control. One or more of these units, mounted at each color cylinder, scans the speeding web as one color registers with another. It detects even a thousandth of an inch out of register . . . transmits the information to the compensating mechanism . . . and the press is brought back into correct register before the error is visible to the human eye.

That's Hurletron automatic color register . . . the practical . . . and profitable . . . method of insuring top quality ROP color register . . . hour after hour . . . day and night. It's accurate. It's speedy. It's dependable. Old time hazards, delays, costs, and uncertainties due to the human element have been reduced or eliminated. Fast or slow . . . color register is maintained throughout the run at all operating speeds.

Hurletron Automatic Color Register Controls are in operation at leading newspaper plants as well as in the finest color printing and rotogravure plants in the country. They're saving time, increasing production, reducing costs. Let us tell you more about this remarkable equipment.

Ask for Your Copy of Our Latest Booklet

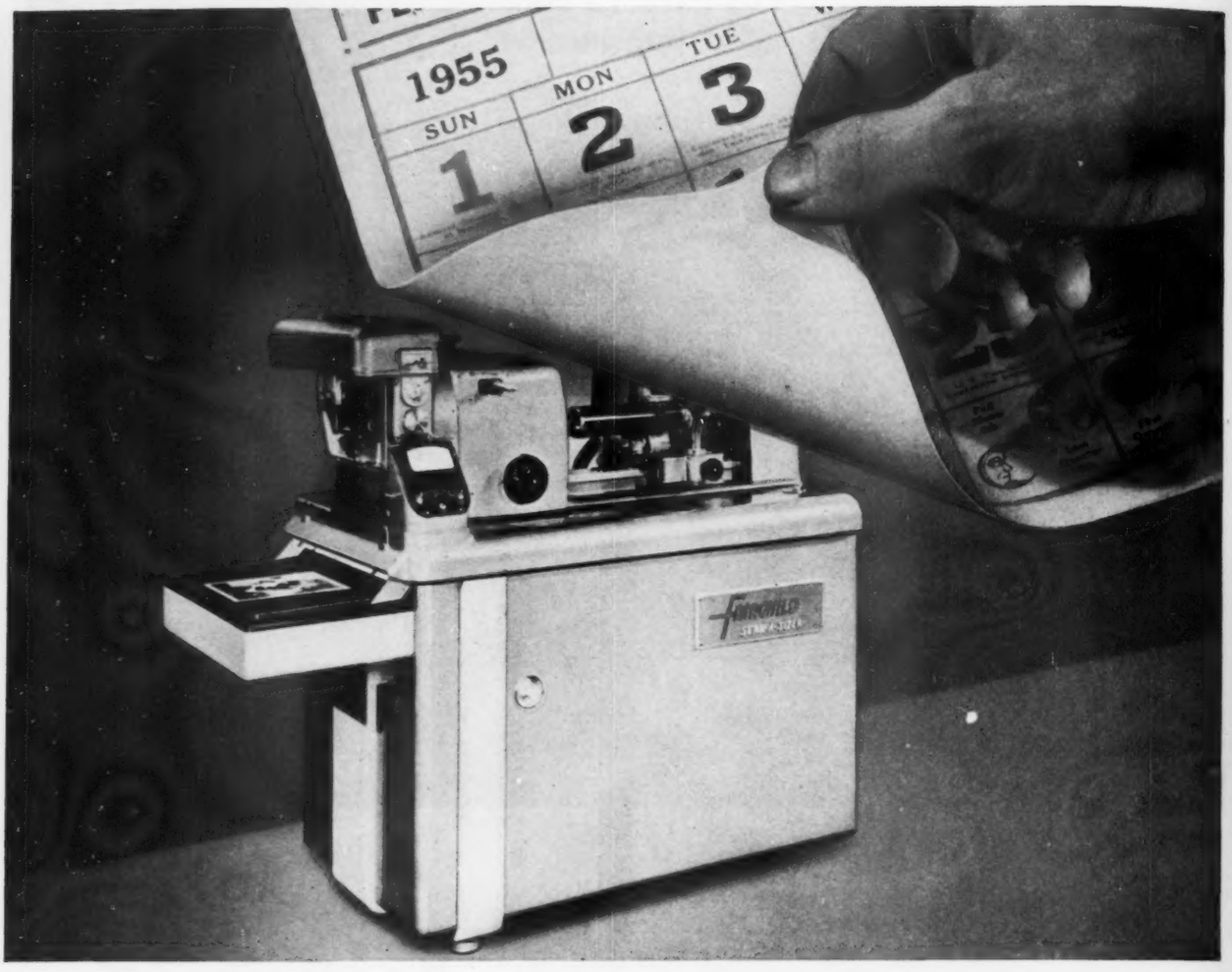
HURLETRON AUTOMATIC CIRCUMFERENTIAL COLOR REGISTER CONTROL

- **Maintains accurate, automatic register of all colors within a few thousandths of an inch.**
- **Controls register established at low speeds up to highest operating speeds.**
- **Makes high speed corrections at splices, reducing off-register waste.**
- **Provides continuous indication of running register. Adjustments can be made in known increments.**

ELECTRIC EYE EQUIPMENT COMPANY

1930 EAST FAIRCHILD STREET, DANVILLE, ILLINOIS

Manufacturers of: Hurletron R.O.P. Color Registration Controls; Automatic Controls of Caliper and Weight on Paper and Board; Center Line and Side Web Guide Controls; Cut-Off and Back-Up Controls; Slitter Controls; Moisture Controls.



FAIRCHILD reports progress on new electronic engraving equipment

Later this year newspapers and others will be using pilot models of the SCAN-A-SIZER® machine to enlarge or reduce photo copy as much as 4½ times while engraving 85- or 120-line cuts up to 13⅛" x 16½". It will produce high quality plastic halftones at low cost from photos or mounted art up to 18" x 22½".

The Variable Response Unit, which is now undergoing a full-scale program of tests and experiments, will aid in compensating for variations in photo copy and mechanical media by varying tonal values and dot structure *during the engraving process.* New Tandem-rigs for SCAN-A-GRAVER® machines that permit simultaneous double-plating from one piece of copy are now in production. Color electronic engraving? . . . Fairchild has already made good color plates in the laboratory. A definite announcement about its commercial application will be made in the future!

A six year record . . .

Fairchild entered the graphic arts field in 1949. Today, the SCAN-A-GRAVER is used by the majority of small and medium-sized daily and weekly newspapers in the U. S. and Canada. Now, the significant new advances outlined above definitely establish Fairchild electronic engraving even more widely in the graphic arts. You will see that the year 1956 will be a continued period of even more dynamic growth!

• For more information on Fairchild electronic engraving machines that make low-cost halftones right in your own plant, write Fairchild Graphic Equipment, Inc., 88-06 Van Wyck Expressway, Jamaica, N. Y., Department 100-9E1.

FAIRCHILD
GRAPHIC EQUIPMENT, Inc.

147 TIMKEN® bearings add up to high-speed dependability in big Babcock 5-color press

THIS Babcock 5 & 5 or Double 3 & 2 prints 5 colors on a single web or 3 & 2 colors on two webs simultaneously—Maximum web width 74". Used for printing magazines, it provides heavy-duty, high-speed performance—1200 ft. per minute—with flawless dependability.

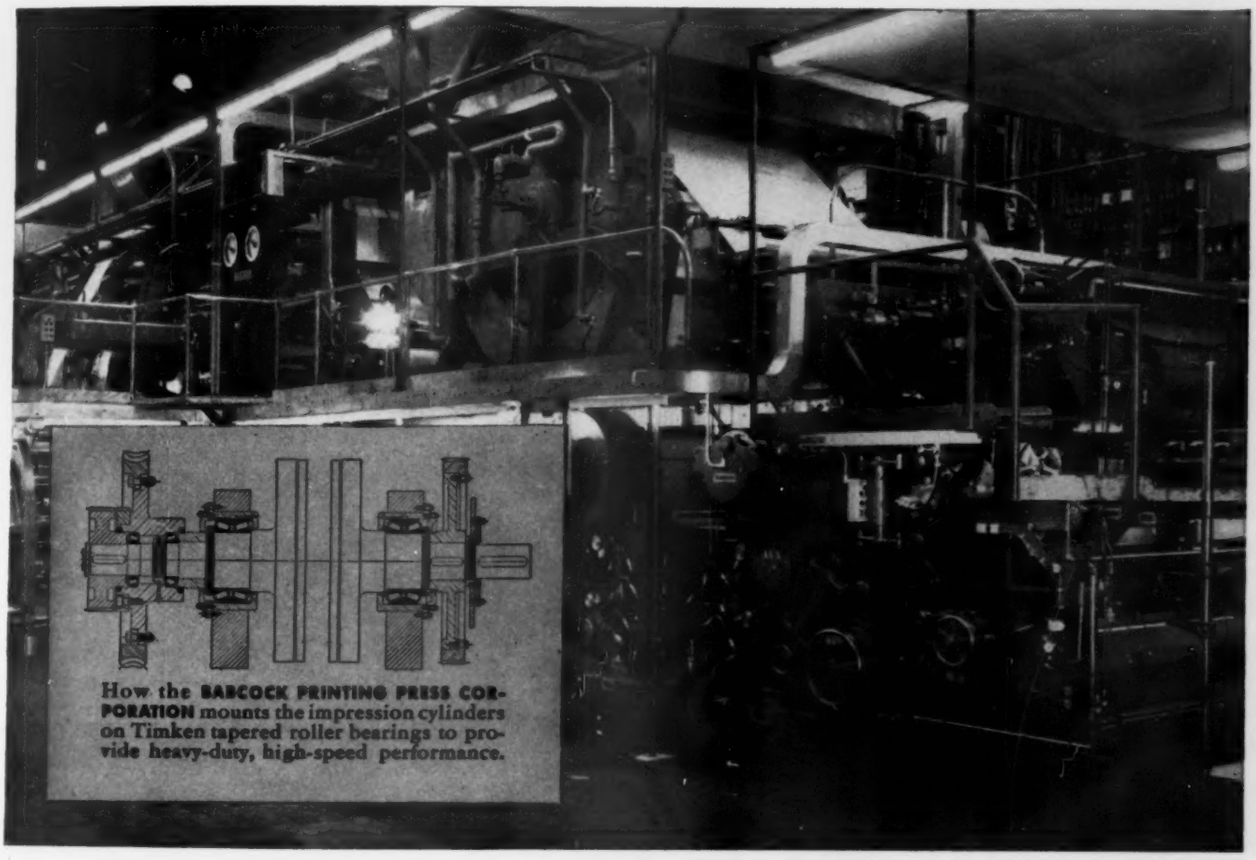
Significantly, Babcock places its reliance in Timken® tapered roller bearings, 147 of them to be exact, in 9 key locations throughout the drive, to the press, ink carriages and folder, "Particularly," says Chief Engineer C. V. Knell, "where there is a combination of thrust and radial loads."

Their tapered construction lets Timken bearings take radial and thrust loads in any combination. Cylinders and shafts are permanently aligned, wear on moving parts reduced.

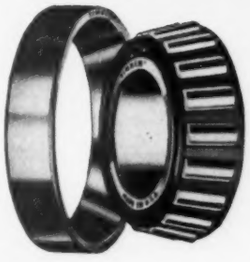
Timken bearings are designed to have true rolling motion and precision manufactured to live up to their design. They practically eliminate friction, remove all speed restrictions due to bearings.

No other bearings can give you all these advantages. Wherever long-lasting precision is important, use the bearings trade-marked "Timken". The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

This symbol on a product means its bearings are the best.



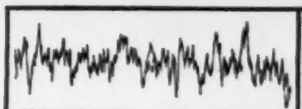
How the **BABCOCK PRINTING PRESS CORPORATION** mounts the impression cylinders on Timken tapered roller bearings to provide heavy-duty, high-speed performance.



TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

TAPERED ROLLER BEARINGS



PROFILOGRAPH TRACE, GOOD COMMERCIALLY GROUND FINISH (5,000 X VERTICAL, 30 X HORIZONTAL)

PROFILOGRAPH TRACE, TIMKEN BEARING FINISH (5,000 X VERTICAL, 30 X HORIZONTAL)

OPTICAL FLAT, PERFECT FINISH

SMOOTH TO MILLIONTHS OF AN INCH

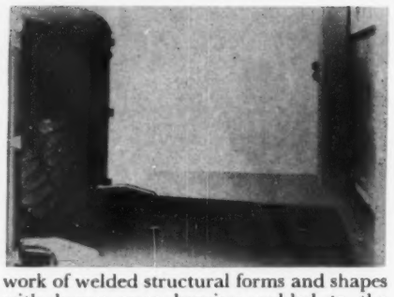
Surface finish of high quality Timken bearing rollers and races is so smooth that it takes a profilograph to measure its smoothness. This instrument measures surface variations to a millionth of an inch, as shown at the left.

NOT JUST A BALL ○ NOT JUST A ROLLER ⬭ THE TIMKEN TAPERED ROLLER ⬭ BEARING TAKES RADIAL ⬮ AND THRUST →⬮← LOADS OR ANY COMBINATION

Equipment & Supplies

(Continued from Page 8)

device and self-leveling action both of which compensate for varying heights of freight carrier beds plus carrier spring deflection during freight transfer. The safety feature will hold the deck in its last position should the carrier leave the dock accidentally. For operation, the hinged platform deck is raised by push button control. Layover arms and two-sectioned, hinged bridge plates rest on the carrier bed. After transfer is completed the deck is positioned flush with the dock. The unit is available with stationary arms, No. 4 A.F., or with retractable arms, No. 4 A.F.R. Construction is of ⅜ in. non-skid floor plate on a framework of welded structural forms and shapes with heavy cross bracing welded to the underside of the framework. Side toe plates are provided to prevent a gap between the dock and the deck. Standard width is 6 ft. with a choice of lengths of 5 ft., 6 ft., 7 ft. 6 in., or 10 ft. For further details, please mention PEE No. 555 in your request.



DO THE WORK OF HOURS *in Minutes!*

SLASH YOUR PRINTING COSTS WITH THE

Rouse

POWER MITERER

If you need miters in either small or large quantities, no other machine nor method can turn out anywhere near as many perfect joining miters so quickly from strip material. That's how the Rouse Power Miterer can slash your printing costs by doing work in minutes that now takes you hours.

A Rouse Power Miterer won't cost you one cent! Printers the world over say that money paid for a Rouse Power Miterer quickly comes back through tremendous savings in expensive time. After getting your money back, you'll start collecting daily dividends from permanently lower operating costs.

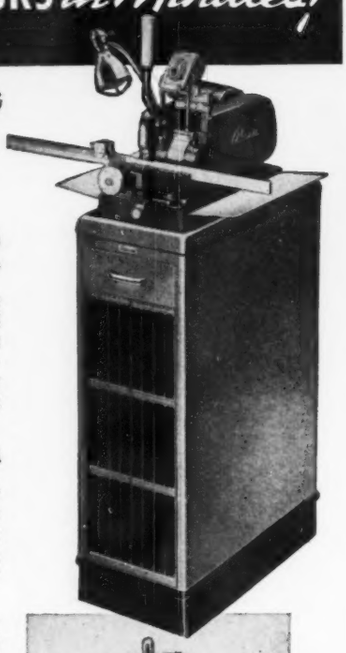
FROM THE SMALLEST JOB SHOP UP TO THE LARGEST PLANT, ONLY ROUSE MAKES A POWER MITERER FOR EVERY TYPE OF USE.

You may buy any Rouse Power Miterer as a bench model or with any other equipment you wish.

Virtually every printing plant in the world uses one or more Rouse products.

NEW ROUSE CATALOG

Write for your copy TODAY!



800 Miters in 45 minutes

H. B. ROUSE & COMPANY

2214 NO. WAYNE AVE., CHICAGO 14, ILLINOIS

ROUSE PRODUCTS — THE STANDARD OF THE WORLD FOR 50 YEARS

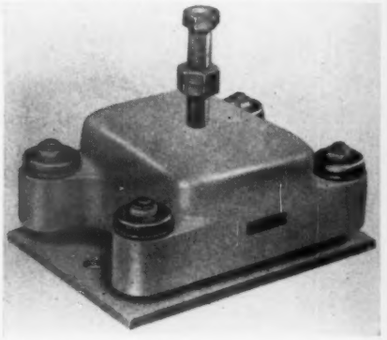
MITERING MACHINES
LEAD and RULE CUTTERS
COMPOSING STICKS
TYPE GAUGES
SLUG CLIPPERS
BAND SAWS

Printing Ink Conditioner

Glazcote, a scratch resistant printing ink conditioner, has been announced by Central Compounding Co. According to the manufacturer, homogenized Glazcote will provide a tough, scuff resistant finish to offset and letterpress inks. Glazcote, it is claimed, eliminates crystallization, controls chalking and aids color trapping. It is also claimed to hold inks open during idle press time, and to allow overprinting after delays between colors. Homogenization is employed to maintain uniform consistency and to insure against settling out or separation of materials. For further details, please mention PEE No. 550 in your request.

Vibration Mountings

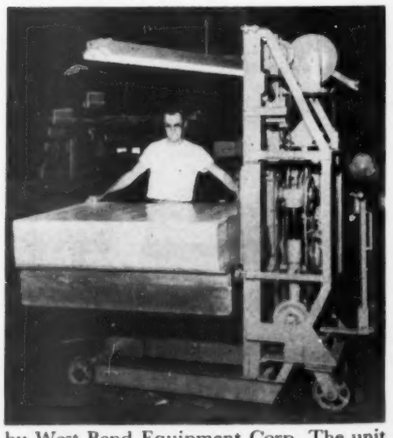
A new line of steel spring vibration mountings has been developed by T. R. Finn & Co., Inc. These Finnflex Type SB Steel Spring Vibration Mountings are equipped with Nylon liners and precompressed cylindrical rubber bumpers which absorb thrust in any horizontal direction. Mountings, which are housed in cast semi-steel, are equipped with helical steel springs.



A bolt is provided to secure mounting to the machine and also for a means of leveling. The Nylon liners afford protection to the rubber from abrasion. Damping is provided by the liners which are pressed around steel studs by the precompressed rubber thrust bumpers. Sway control assemblies are built in and adjustment is set by self locking sway control nuts. Mountings are available with rubber bottomed baseplates. The line consists of 41 standard sizes, ranging in rated load capacity from 100 lbs. to 6500 lbs., with higher load capacities available. For further details, please mention PEE No. 562 in your request.

Portable Paper Elevator

A portable electric elevator for handling skidloads of paper was recently announced



by West Bend Equipment Corp. The unit elevates skidloads up to table height. Plat-

(Continued on Page 16)

The Mattia Press

orders 5-unit

HOE *Printmaster*

The press will have a maximum capacity of 40 pages full size or 80 pages tabloid. Provision has been made for the future addition of a sixth printing unit.

•

Two folders will permit running two different jobs simultaneously. Each folder will have combined ½-page and ¼-page (mail) delivery mechanisms.

•

The press will be equipped with enclosed forced-feed oil lubrication and with the exclusive HOE automatic ink pump system. An ink box design innovation attaches the pumping mechanism to a removable cover to facilitate cleaning and color changeover.

•

To provide color versatility, each unit will have a reversing mechanism making it possible to print

Spot color on 32 pages of a 48-page tabloid
Three colors on 16 pages of a 48-page tabloid
Four colors on 8 pages of a 48-page tabloid
Three colors on 8 pages of a 64-page tabloid

The Mattia Press, Belleville, New Jersey—printer of *The Advocate,* official organ of the Archdiocese of Newark, and *The Jewish News* of Essex County—has selected a 5-unit, two-folder HOE PRINTMASTER to satisfy expanding requirements in the general commercial field.

This press of completely new design will enable MATTIA to handle an unusually wide range of products most efficiently and profitably.

The PRINTMASTER can be built to meet the individual requirements of a medium-size newspaper or commercial printing plant:

- With floor mounting for end-roll feed, or with substructure mounting for underneath feed;
- With whatever number of printing units is desired;
- With whatever color printing facilities are required.
- Additional units and further color-printing equipment can readily be installed whenever needed to meet increasing production demands.

R. HOE & CO., INC.

910 East 138th Street New York 54, N. Y.
BRANCHES: BOSTON • CHICAGO • SAN FRANCISCO
BIRMINGHAM • PORTLAND, ORE.

WHEN THE GOING GETS ROUGH...

SWITCH TO BEVERIDGE MATS!

The advantages of Beveridge Mats are most noticeable when the going gets rough. It's then you need sharp, faithful reproduction with minimum make-overs, clean release of plate in casting and uniform high shrinkage. Take the roughness out of your reproduction problems. Try an order of Beveridge Mats. You can't buy better.

Beveridge Dry Mats

NEW PRODUCTS DIVISION

BEVERIDGE PAPER CO.

Indianapolis 4, Indiana

OVER 3,000 BAUMFOLDER USERS of the 17x22 "JUNIOR JET" say... "IT'S A GOLD MINE!"

- It will easily be the same for you as for the over 3,000 purchasers in recent years who say... "It pays for itself many times over every year."
- It's the world's closest-precisioned . . . finest . . . fastest folder. Makes folding your most profitable operation. 5 folds in 1 operation, 60 styles of folds . . . makes perforating practically ALL profit. It's an automatic Folder; automatic lightning-speed Perforator; automatic Scorer; automatic Cutter; automatic Crimper . . . All-in-One. Tomorrow's Automatic . . . at a pre-war price. Equipped with Friction Feed—$100 initial and $48.00 per month for 30 months . . . with Suction Pile Feed, extra motor and pump—only $100 initial — 30 months Pay-For-Itself terms.
- ***A "Gold Mine" for a Life-Time. Do allow us to mail specifications. Thanks.***

RUSSELL ERNEST BAUM, INC.

615 Chestnut St., Phila. (6) Pa.

Telephone LOmbard 3-8164

Equipment & Supplies

(Continued from Page 14)

form can be raised or lowered an inch at a time. The unit is a Weld-Bilt Hydraulic-Electric Type Elevator, with fork type platform to fit beneath skids. Operation is on standard 110 v., a.c., 60 cy., s. ph. current by plugging into power source. Cord is carried on spring reel. Roller bearing wheels and Autotype steering permit positioning. Capacity of model is 1500 lbs.; capacities from 500 lbs. to 5000 lbs. are also available. For further details, please mention PEE No. 542 in your request.

Monotype Mold Improvements

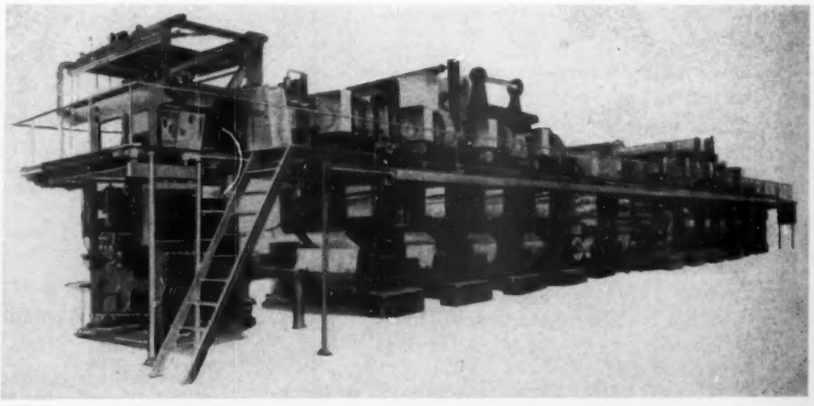
Lanston Monotype Corp. has developed a number of improvements in molds for the Giant Caster and for the Material Making Machines. In addition, Varidrive equipment is now furnished on all new Giant Casters to replace the conventional constant speed motor formerly supplied.

For the Giant Caster, a new mold (Style 3GS) enables the casting of a dual height base. One dimension is 0.763 in. high for mounting electros, stereos of plastic cuts of approx. 0.155 in. thickness. The other dimension, 0.853 in., may be used for mounting 16 ga. (0.065 in.) cuts to bring them up to type height. The base is cast without core with straight sides; the molten metal is injected into the mold in such manner that the interior resembles a truss or bridge structure which permits considerable pressure with minimum lowering of the base height under molding pressure.

Molds have been developed for use on the Material Making Machine. These are the 18 pt. and 24 pt. style NR5A Mold and the 30 pt. and 36 pt. Style NR2B Molds for casting materials with straight sides instead of the recessed base cast on the older Style NR2A Molds which Monotype has discontinued manufacturing.

The second mold (in different capacities bodywise) for use with the Material Maker

(*Continued on Page 20*)



Web Fed Letterpress—George F. Motter's Sons announce a web fed letterpress for all types of high speed letterpress production. The press prints from curved electrotypes, stereotypes or rubber plates. Any number and arrangement of press sections, either horizontal or stacked, can be provided to meet specific space and production requirements. Folders and driers to meet particular stock, ink or other conditions can be supplied as integral parts of the press. Ink distribution system transfers the first supply of ink to the plate first, providing better rubout, states sponsor. An ink applicator can be substituted for the ink fountain where desired. Offsetting is prevented by an oil wipe for the second impression cylinder to remove offsetted ink from the first impression cylinder. The rollers are first set radially to the ink drum by one adjustment, then to the plate with a circumferential or peripheral adjustment. Access to the press is accomplished by rolling back the carriage to as much as 30 in. Ink distributing rollers and drums can be mechanically washed in either the printing position or in extreme roll back position. Manufacturer also states a separate clutch for each press section provides operator safety while work is being done and permits simultaneous replating or other work on all sections of the press. Auxiliary inching drive, with separate pushbutton control, permits inching of additional press units independently from the main drive. For further details, please mention PEE No. 549 in your request.

14 more newspapers choose GOSS Universal®

Proved by Performance

* The *Painesville* (Ohio) *Telegraph*, the *Chicago Heights* (Illinois) *Star*, the *Boulder* (Colorado) *Camera*, the *Port Arthur* (Texas) *News*, the *Benton Harbor* (Michigan) *News-Palladium*, *The Huntsville* (Alabama) *Times*, the *Logansport* (Indiana) *Pharos-Tribune* and the *Dedham* (Massachusetts) *Transcript* . . . all have ordered UNIVERSAL presses recently.

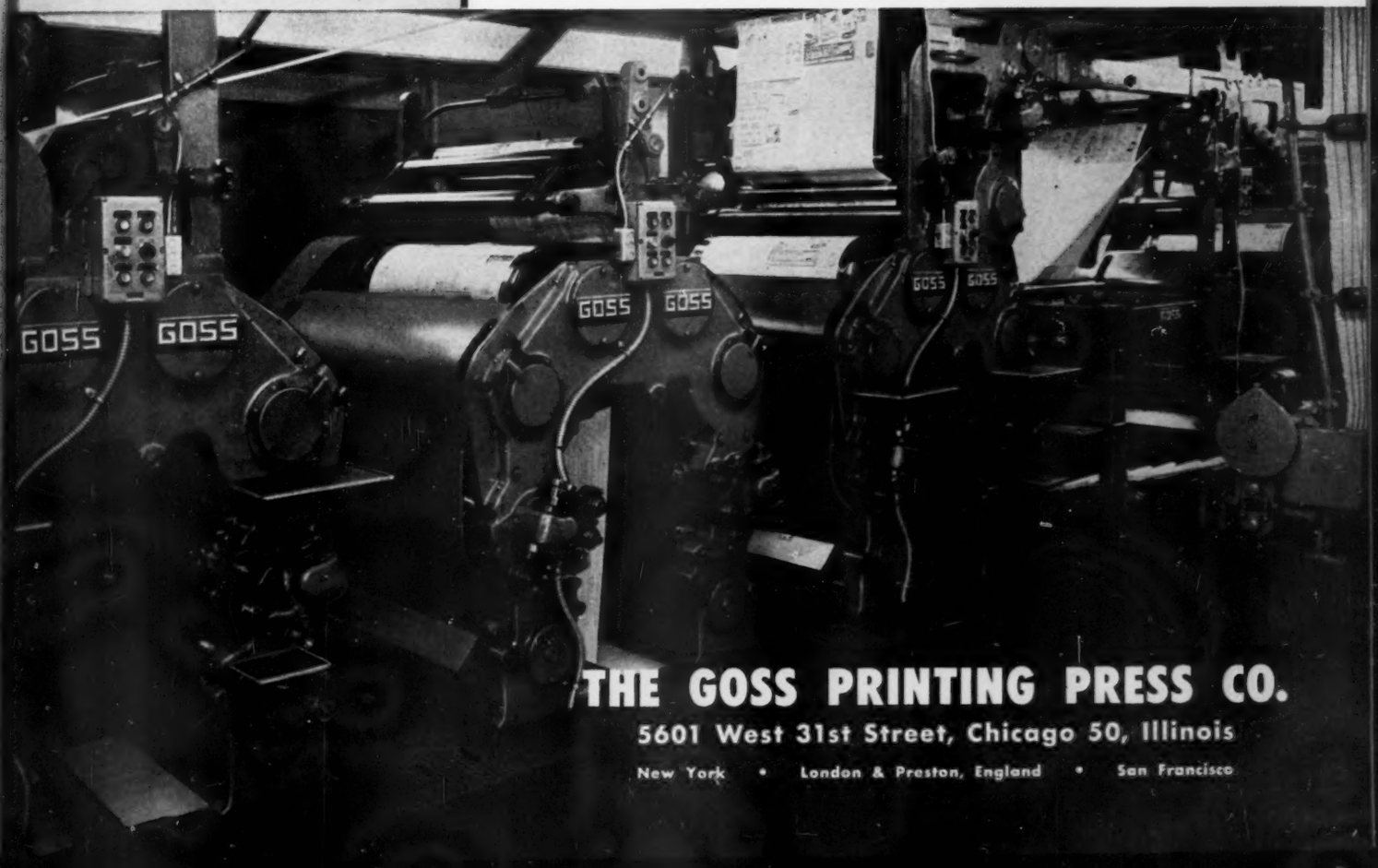
The Lawton (Oklahoma) *Constitution* and *The Lawton Morning Press*, the *Fort Dodge* (Iowa) *Messenger & Chronicle*, the *Catholic Standard & Times* of Philadelphia, the *San Rafael* (California) *Independent-Journal*, MacLean-Hunter Publishing Company of Toronto, Ontario (publishing *The Financial Post* and the *Singapore* (Malaya) *Standard-Tiger* have installed UNIVERSAL presses this year.

In addition, the Post Publishing Company of Detroit, *The Gulfport* (Mississippi) *Herald*, the *Albuquerque* (New Mexico) *Tribune* and the *Albuquerque Journal* and the *Kankakee* (Illinois) *Daily Journal* have added to their UNIVERSAL presses.

The decisions of those astute publishers were based upon the performance records of UNIVERSAL presses from Coast to Coast and from Canada to the Gulf.

*Already 185 UNIVERSAL press units have been specified by publishers for high production and low maintenance, with moderate initial investment.

ig Press Features at Moderate Cost • Full ROP Color Flexibility • Single-width, Semi-cylindrical Press

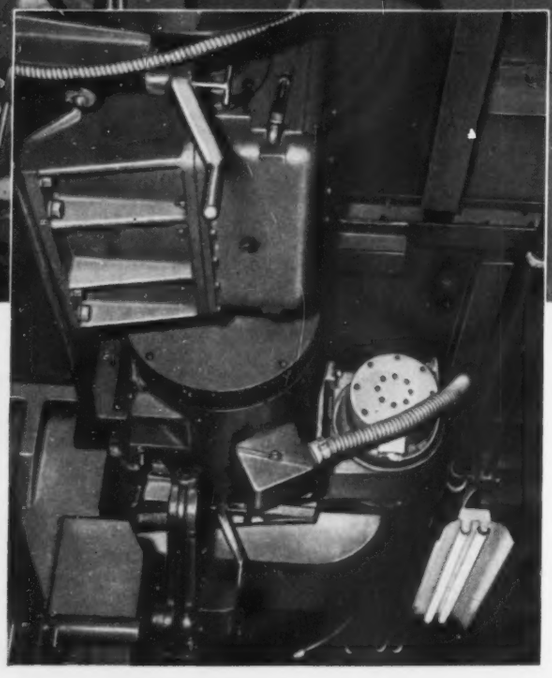


THE GOSS PRINTING PRESS CO.

5601 West 31st Street, Chicago 50, Illinois

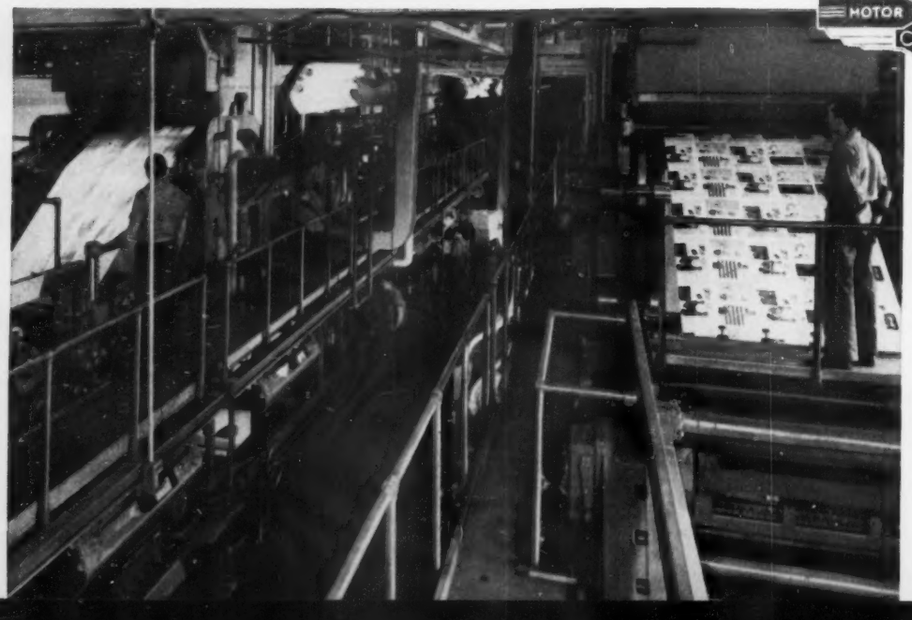
New York • London & Preston, England • San Francisco

Want Better Unit Drive



Cutler-Hammer Unit Control System for
WICHITA (KANSAS) **EAGLE**

R. Hoe & Company press, 4 units and one folder at present. Printing capacity, 45,000 copies per hour. Two additional press units with Cutler-Hammer Control Units are now being added.



MILLIONS OF MAGAZINES A MONTH

The C. T. Dearing Printing Co., Louisville, Ky., produces more than 30,000,000 copies of a dozen or more leading magazines a month on two Cottrell 5-color presses and two Goss magazine presses. These four presses represent $2 million worth of precision equipment. They are completely equipped with Cutler-Hammer Drives and Control.

ve Press Performance?

keep it simple–keep it sturdy

KEEP IT CUTLER-HAMMER

It makes sense . . . and it makes money . . . to look for the simplest and most dependable unit newspaper drive and control. To look for anything *else* is to look for trouble.

This hard common sense is leading more and more experienced newspaper men to the Cutler-Hammer Unit Control system for unit drive motors on their new unit presses. This is a *paired* system . . . simple, sturdy, trouble-free unit a.c. wound rotor motors *paired* with Cutler-Hammer Unit Drive Control made up of simple, sturdy industrial type control components known to every plant electrician . . . and together giving you the fundamental needs. Easy inching and threading, smooth acceleration to maximum press running speed, high efficiency at running speed, perfect synchronization of motors, long life, freedom from trouble, flexibility . . . all these are yours together with specific Cutler-Hammer superiorities. There's the new C-H cam drum accelerating device with 83 speed points. There's the fact that inching and threading *don't* draw current through the unit drive motors. There's freedom from troubles such as changing load, adjusting resistor switches, unbalanced loads, circulating currents and excessive peaks. *And your own electrician can service this drive and can service this control.*

The C-H Representative has a dramatic and compelling story to tell. See him before you buy. CUTLER-HAMMER, Inc., 1460 St. Paul Avenue, Milwaukee 1, Wisconsin.

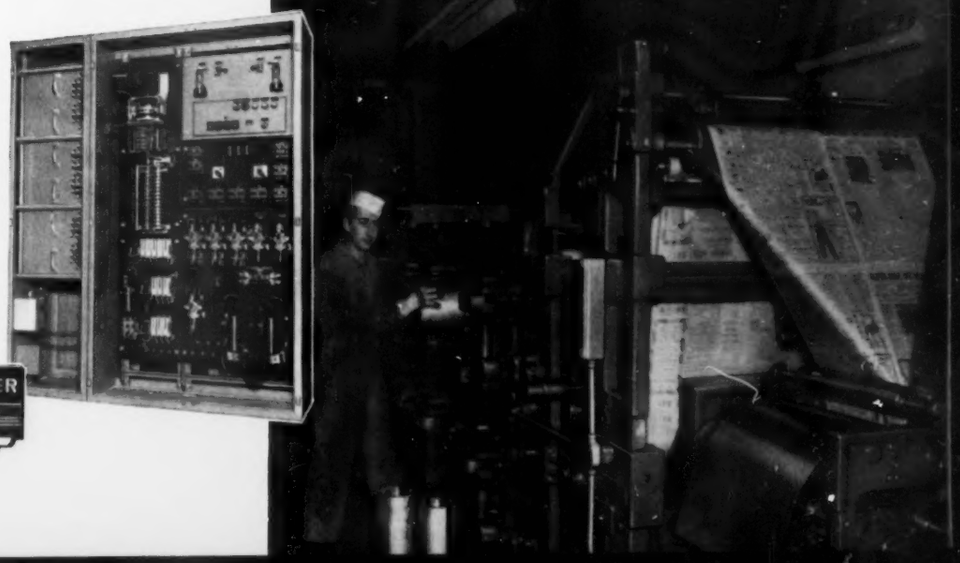
CUTLER-HAMMER
WEB BREAK DETECTORS

Stop press quickly if web breaks. Web can be rethreaded without latching detectors. Easy to mount.

CUTLER-HAMMER
MOTOR CONTROL
C-H

CUTLER-HAMMER
WEB SEVERING DEVICE

A Cutler-Hammer "original" that has resulted in greater total savings than any other single accessory. It instantly slashes broken web close to impression and guards against destructive wrap-arounds and costly delays—resets automatically.



Cutler-Hammer Electronic Control for single motor drive on Goss Dek-A-Tube press in plant of

MADISONVILLE, KY., MESSENGER

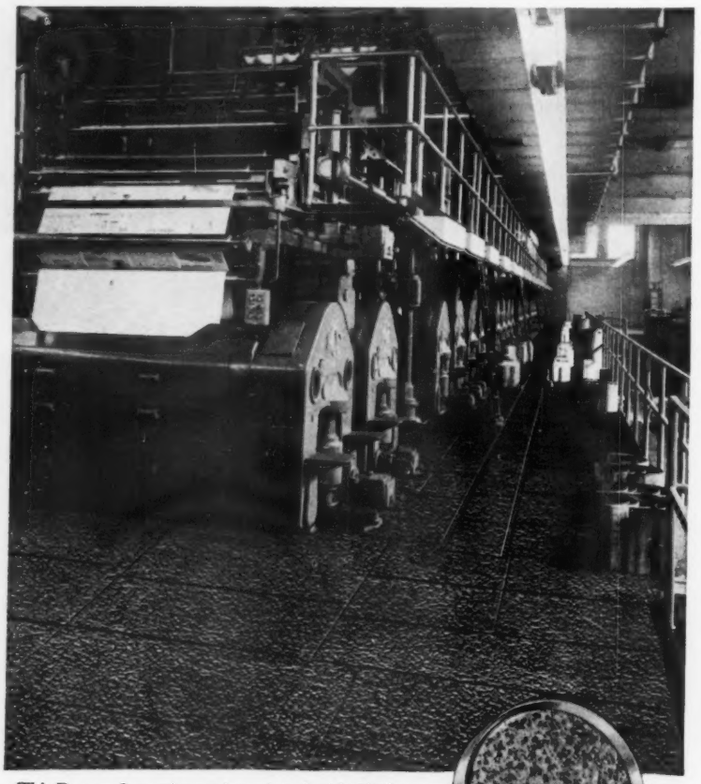
"The whole setup is running smoothly, and we are looking forward to many years of satisfactory operation," says Edgar Arnold, Jr., Assistant Editor.

CUTLER-HAMMER
MOTOR CONTROL
C-H

Good News

for Pressmen at the

AKRON BEACON JOURNAL



This Beacon Journal press is equipped with Algrip walkways on the upper level, giving protective footing between press units as well as on the main floor.

Magnification shows the even distribution of abrasive . . . that magnifies foot safety.

Safety . . . is the good news in the Akron Beacon Journal pressroom. The Ohio daily joins the list . . . steadily growing . . . of newspapers using ALGRIP Abrasive Rolled Steel Floor Plate to protect their workers against the slipping hazards that ink mist and oil produce on pressroom floors.

More than 31 leading newspapers . . . total daily circulation almost 5 million . . . have found the safety value of the *only* abrasive rolled steel floor plate. ALGRIP'S abrasive . . . deeply and uniformly embedded . . . gives permanent protection against slipping hazards in pressroom . . . stereo and composing rooms . . . mailroom . . . on levels or ramps—wherever sure footing is a "must."

And ALGRIP'S safety keeps dollars from slipping away . . . lowers insurance costs . . . helps pay for itself. Send for our new ALGRIP Foot Safety booklet, AL-31.

A.W. ALGRIP

Approved for safety by Underwriters' Laboratories

NATIONWIDE APPROVAL—ALGRIP-Safetyized newspaper installations include: The Bulletin, Philadelphia, Pa.; Detroit Free Press; Cleveland Plain Dealer; St. Petersburg Times; Seattle Times; Flint Journal; Miami Herald . . . Complete list supplied on request.

ALAN WOOD STEEL COMPANY

Conshohocken, Pa.

Other Products: A.W. SUPER-DIAMOND Rolled Steel Floor Plate • Plates • Sheets • Strip • (Alloy and Special Grades)

Equipment & Supplies

(Continued from Page 16)

is known as the Style NR2G Trimmer Mold which is available in size from 2 pt. to 18 pt. The 2 pt. mold is symbolized NR2G2F. The 14 pt. to 18 pt. Molds are symbolized NRA2G.

The 6 pt. Mold is symbolized NR2G. By changing matrices, it can be made to cast five different products as follows: (1) Straight rules, (2) Continuous decorative borders, (3) Full face flush side rules, (4) Slugs 0.895 in. high to permit basing Scan-A-Graver plates by using a different matrix, and (5) Slugs 0.888 in. high.

For further information, please mention PEE No. 537 in your request.

Elevating Dumping Mechanism

The Nolan Meltevator, an automatic type metal elevating and dumping mechanism, can be adapted to any process requiring top loading of bins, furnaces or other receptacles such as conveyors. The Meltevator is manufactured by Nolan Corporation. Up to 800 lbs. of material that can be loaded in Nolan's specially designed

trucks can be lifted and dumped. Installation space is 30 in. by 30 in. Vertical lift of the standard unit is 4 ft.; special units manufactured according to manufacturers' specifications up to several floor heights. Overall height is 8 ft. 7 in. Material to be dumped is wheeled in a special truck into the Meltevator. Load is raised and dumped by push button control. A third safety button will stop the truck at any position. For further details, please mention PEE No. 556 in your request.

Japanese Photolettering Machine

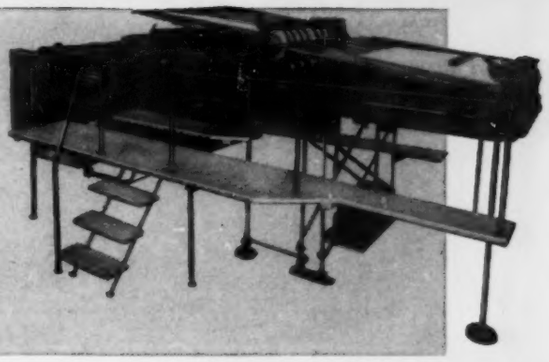
A Japanese photolettering machine with a speed of 40 to 50 characters per minute is being offered in this country by Sakata Shokai, Ltd. Point size of the original letter

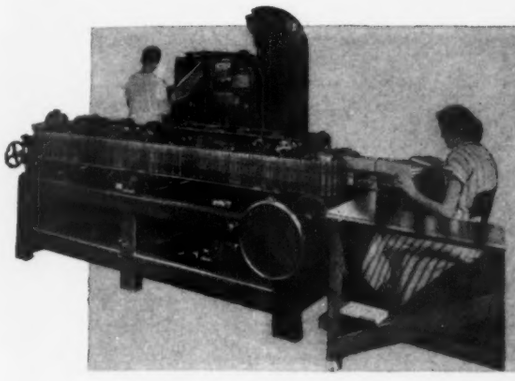
(Continued on Page 65)

Up Goes Production ... Down Go Costs!

"N" Quad Folder Duplex Attachment

• With this attachment, your present "N" Quad can be adapted to deliver *four* 32 page closed head signatures, perforated head and foot or, on certain lightweight stocks, *two* 64 page signatures (inserted 32s), instead of its present *two* 32s — with economies in folding and subsequent gathering and sewing. • Your "N" Quad can still be operated as a standard single quad.





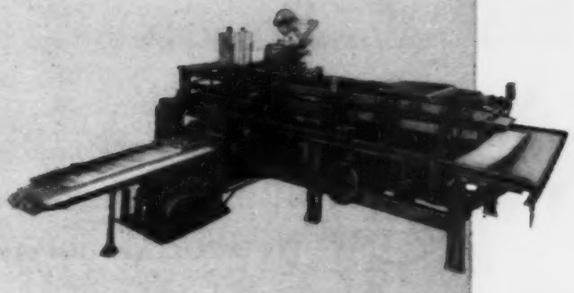
Dexter-de Florez Building-in Machine

• Builds-in hard cased books at speeds up to 2000 per hour. • Any thickness, including case, from 5/16 to 2-13/16", and any width 4 to 8" and any desired length. • Delivers finished books in steady stream about ten seconds after they are fed into compression belts. • Does away with stacking and unstacking, also investment in and maintenance of boards.

Dexter-de Florez Sheet Fed Case Maker

• Builds cases from approximately 6 x 8" to 13 x 20", finished case size.

• Continuous movement of the case during manufacturing eliminates machine vibration problems and produces up to 3000 top quality cases per hour.

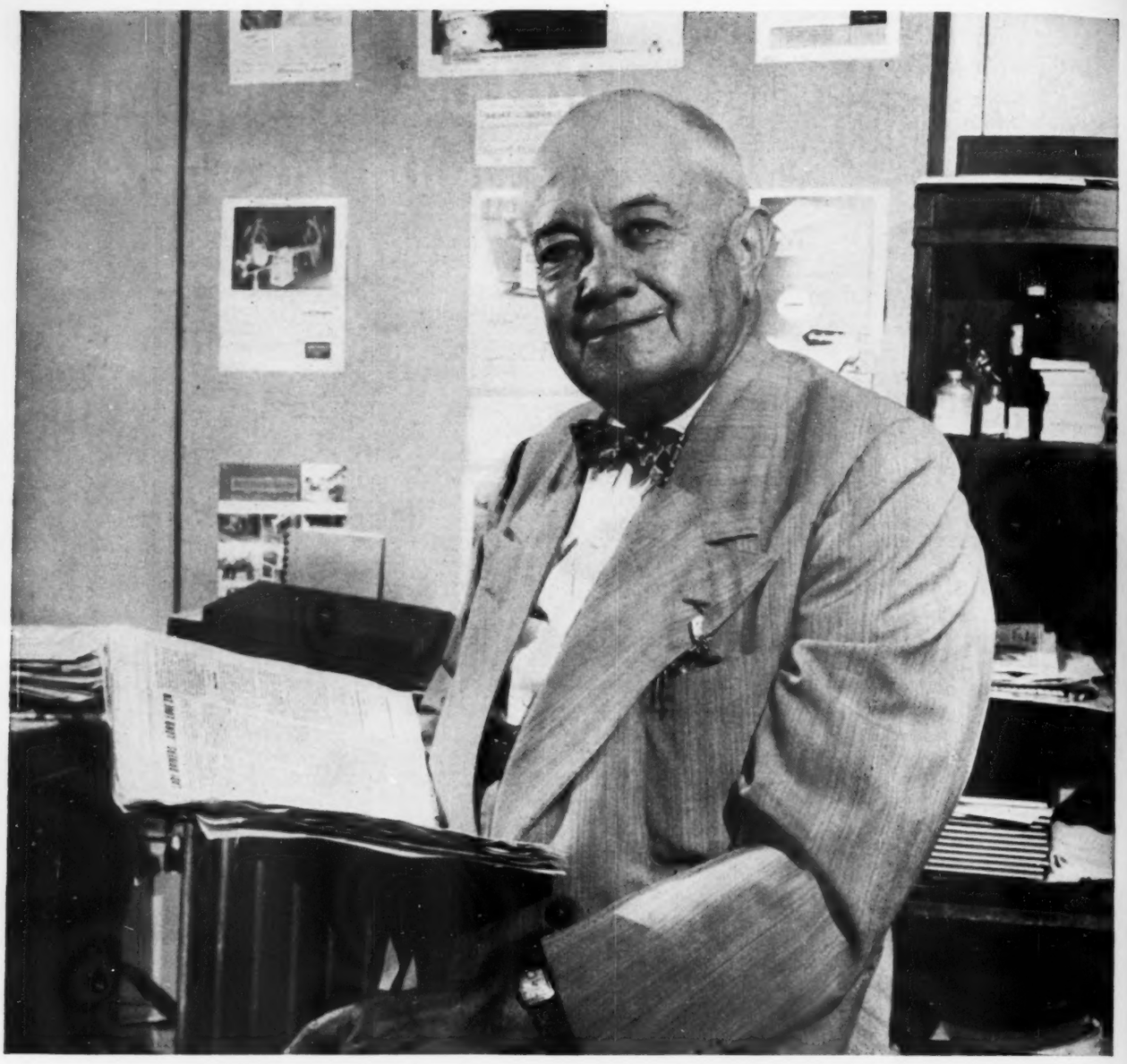


ILLUSTRATED CIRCULARS ARE AVAILABLE FOR ANY OF THE ABOVE MACHINES

DEXTER FOLDER COMPANY

General Sales Office

330 West 42nd Street New York 36, N. Y.



". . . fast, flexible composition clear, crisp reproduction— that's my word for Monotype"

"Speed we *must* have! Typographic excellence, too. In typesetting we get both *only* with Monotype®." So says Edwin H. Stuart, well-known head of Edwin H. Stuart, Inc. Typographic Service, Pittsburgh, Pa.

"Usually," he continues, "speed quarrels with quality. But not in this shop. We have learned how to cut a lot of corners . . . but *never* at the sacrifice of good work. Our Monotype System of typesetting is one important reason. It means fast, flexible composition; clear, crisp reproduction—that's my word for Monotype."

Many other well known typographers and printers operate the Lanston Monotype System of typesetting for precisely the same reasons. Today's high time costs *demand*, above all else, speed *with* typographic excellence. Write for illustrated booklet—no obligation.

This advertisement is set in Bulmer, a Monotype Type Face Available in Library

LANSTON MONOTYPE MACHINE COMPANY

Twenty-fourth and Locust Streets, Philadelphia 3, Pennsylvania

Offices in principal cities; also represented by: A. E. Heinsohn, Inc.

Mac—
Here's what we mean by
"Changing walking time to working time"
. . . a saw trimmer for every
two compositors—like this—
It pays in time savings
—Al.

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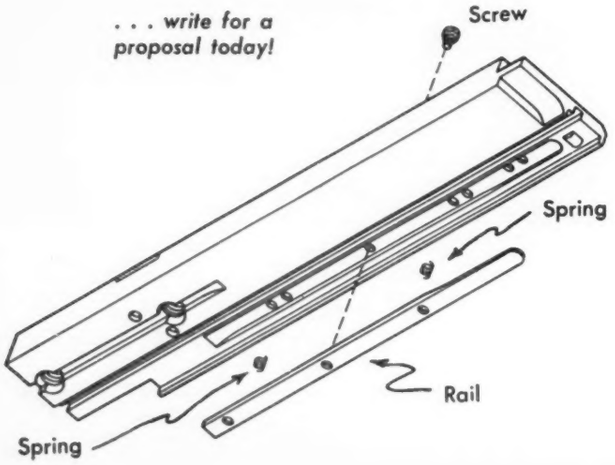

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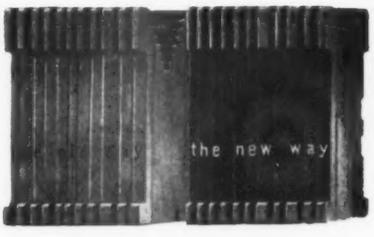

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Convention Speaker: Symbol of Craftsmanship

We are featuring this picture of one of the speakers at the Intl. Craftsmen's convention in Cincinnati because it typifies the spirit in which all the convention speakers approached their job. In a forthright and friendly manner, these men gave of their time and knowledge that all Craftsmen might improve their plant supervision methods. Pictured here is Russell Anness, chief design engineer, Gardner Board & Carton Co., Middletown, O.

Intense Interest at Post Clinic Session—Immediately after adjournment of the Letterpress Clinic held during the convention of the Intl. Assoc. of Printing House Craftsmen, Cincinnati, August, a considerable number of commercial printing plant executives engaged the speaking panel in off the record conversations. Seated at right are (front to back): Phillip Evanoff, sales service engineer, Mead Paper Co.; O. F. Duensing, sales manager, Vandercook & Sons, Inc.; Albert T. Kuehn, Development Engineer, Miehle Printing Press & Mfg. Co.; (standing with back to camera) Ronald I. Drake, Technical Advisor, Champion Paper & Fibre Co.; (also at extreme right with back to camera) George F. Rooney, jr., president, The Winton Engineering Co.

Craftsmen's Technical Sessions Successful

Top flight speakers, a well planned and executed technical program, and many interested Craftsmen combine to make the 1955 Cincinnati International convention educational and inspiring.

Craftsmen from many parts of the U. S. and Canada had opportunity to learn more about their crafts at the 36th annual convention of the International Assoc. of Printing House Craftsmen, Inc.

Top men in the industry were available in six technical clinics on subjects ranging from gravure, offset and letterpress printing to quality control, safety and maintenance, tricks of the trade, packaging, bindery problems, and paper, foils and films.

Lee Augustine, general convention chairman, and his committees worked hard to prepare for the 1011 persons who were registered for the convention. It was one of the best managed International conventions. The convention was in session from Aug. 8 through Aug. 11 at the Netherland Plaza Hotel, Cincinnati, O.

Constance Wortman, ladies' committee chairman, and her committee were to be congratulated on what the attending ladies tell us was "a wonderful and entertaining program."

Nontechnical subjects covered by various speakers in luncheon and regular sessions included club management problems, Bill Gutwein's club program on *How the American Business System Operates*, the Printing Week Stories of the Michiana and Cleveland clubs, and inspirational talks by John D. Corrigan and Dr. Kenneth McFarland.

After the official adjournment of the convention on Wednesday, Aug. 11, Craftsmen and their ladies enjoyed a dinner and evening's entertainment.

Printing Week Story

Craftsmen paused momentarily from their efforts to promote Printing Week 1956 in order to review the best of the 1955 Printing Week celebrations. Floyd C. Larson, chairman, International Printing Week Committee, was presiding officer at the Printing Week luncheon; Thomas P. Mahoney, Past International President, presented the poster and stamp contest awards. (For the story of these winners, see page 66, August *Printing Equipment Engineer*).

Reciting the *Michiana Printing Week Story* was Rawson H. Murdock, jr., South Bend, Ind. "We did well; like most, we fell short of our expectations, but we know there's no possibility of over-doing Printing Week," Murdock said. Edward T. Samuel, Cleveland, gave the *Cleveland Printing Week Story*. "Of the 15 activities (on the International Printing Week activity check list) we performed 12, with much room to spare for improvement . . . we have only scratched the surface," he concluded.

For Local Clubs

The club management luncheon on Monday, Aug. 8, of the Craftsmen's convention had a fine panel of three distinguished speakers. Ferd Voiland, jr., International second vice president, presided. Ben Ebersole, greeter's chairman, San Francisco Club, explained the operation of the *Table Host* program used at the San Francisco Club. Heart of the program is to get Craftsmen acquainted with one another so they thereby increase their enjoyment of Craftsmenship as well as increase their knowledge. Herbert Livesey, executive secretary, National Assoc. of Printing Ink Makers, gave an excellent talk on the *Philosophy and Practice of Local Club Management*. Wm. F. Gutwein, chairman, International Supervisory Training Committee, delivered his talk and demonstration of *How Our Business System Operates*. This program graphically illustrates the how and why of profits in members' plants and one comes away with new-found respect for the boss and his problems.

Important Side Lights

Kenneth R. Burchard, presiding officer of the Side Lights of Printing session of the Craftsmen's convention, began by saying no one should minimize the importance of the session's topics. Russell Anness, chief design engineer, Gardner Board & Carton Co., Middletown, O., then gave a talk on *Preventive Maintenance and Its Functional Organization*. Anness' speech will be published in an early issue of *Printing Equipment Engineer*.

Du Wayne R. Carlson, supervisor quality control, Gardner Board & Carton Co., Middletown, O., spoke on the subject of *Establishing a Quality Control System*. Peter J. Bernard, H. Wolff Book Mfg. Co., New York, N. Y., concluded the session with a talk on *Craftsmen's Crusade for Safety*. As part of his presentation, Bernard introduced John Adriansen, Cutler-Hammer, Inc., who demonstrated a new safety control which is part of the new B-65 Code for Controls and Signaling Devices for Graphic Arts Presses. Adriansen is co-developer, along with James Cochran, Harris-Seybold Co., of the safety device.

Members of the Gravure Panel at Cincinnati Craftsmen's Convention—Moderator Jos. H. Jorling, vice president, McDonald Printing Co., Cincinnati, O., is at the microphone. Other members of the panel include (left to right) George Wise, Intl. first vice president and presiding officer of the gravure section meeting; Oscar Smiel, vice president, Intaglio Service Corp., New York, N. Y.; Allen C. Black, rotogravure superintendent, Crowell-Collier Pub. Co., Springfield, O.; Carl A. Ireton, vice president in charge of research and development, The Specialty Papers Co., Dayton, O.; Elmer G. Stacey, rotogravure sales manager, E. G. Staude Mfg. Co., St. Paul, Minn.; and Robert Griffith, Printing Ink Div., Interchemical Corporation. This panel spoke at full session devoted to discussion of gravure printing.

Gravure Process and Its Utilities Described at Craftsmen's Convention

A full afternoon session was devoted to discussion of gravure printing at the recent Cincinnati Craftsmen's convention. The talks ran the gamut of gravure printing from the various cylinder etching processes to the future possibilities of gravure as they can be seen now.

The session took place Monday, Aug. 8, during the 36th annual convention of the International Assoc. of the Printing House Craftsmen, Inc., at Cincinnati's Netherland Plaza hotel. George Wise, International First Vice President, was presiding officer and Jos. H. Jorling, vice president, McDonald Printing Co., Cincinnati, O., was moderator of the session.

Oscar Smiel, vice president, Intaglio Service Corp., New York, N. Y., began the technical portion of the session with a talk on *Photoengraving and Finishing of Rotogravure Cylinders*. He said: "Gravure engraving encompasses the preparation of negatives and positives from copy and the transfer of the positive image to a copper surface. There it is etched or engraved into the copper so that we may print it by the intaglio or gravure method.

"It is immaterial, insofar as the term or process of gravure engraving is applied," Smiel quickly continued, "but quite material to the purpose for which either flat plates or cylinders is intended. In the case of flat plates used on sheet feed presses, printing is usually slower, more exacting, and capable of producing book plates, art reproductions and other types of printed material of the highest quality with the best inks, and on the most unusual and expensive stocks. Photogravure is the term applied to this type of printing.

"Printing from cylinders, on the other hand, is called rotogravure and is usually web printing from rolls of paper or board, or foil, or cloth, or any material flexible enough to put up in rolls. Newspaper supplements, magazines, textiles, wallpapers, cartons, foils, and packaging of all kinds are done by rotogravure."

Gravure Engraving

Smiel then described the engraving process itself. The first step, he said, is the photographing of a piece of copy. If it is for one-color printing, a single continuous tone negative is made without the use of a screen such as is used in photoengraving. The negative is retouched and then rephotographed to get a positive. This continuous tone positive of glass or film, still having no screen in it, is again retouched to emphasize shadow and highlight detail. For two-, three- or four-color printing, a negative and a positive are prepared for each color.

"The retouched continuous tone positive which is a black and white transparency representing the tonal values of the copy must now be transferred to the copper printing surface," said Smiel. "This is accomplished in several ways . . . conventional gravure, News-Dultgen, Alco Process or the Henderson Process.

"Let us take the first and most common method called conventional gravure. A piece of sensitized gelatine carbon tissue is placed in a printing frame in contact with a film or glass screen having tiny black or opaque squares separated by clear transparent lines about one-third the width of the black or opaque areas. There are usually 150 of these squares to the linear inch . . . The screened carbon tissue is then lifted, placed in contact with the continuous tone positive, and again exposed to arc lamps for about ten minutes.

Transfer to the Printing Surface

"After the double exposure on the same tissue is completed, the tissue is placed,

International Craftsman Officers—Elected to office to serve the Intl. Assoc. of Printing House Craftsmen at the August 1955 convention held in Cincinnati, O., August 8-10 are the following:
Front row, left to right: Third vice president, Albert L. Kolb, manager, Printing Dept., Marine Trust Co., Buffalo, N. Y.; president, Amadeo R. Tommasini, superintendent, University of California Press, Berkeley, Calif.
Back row, left to right: Treasurer, Mark Carothers, manager, Printing Dept., First National Bank, Dallas, Tex.; second vice president, Ferd Voiland, jr., State Printer for Kansas, Topeka, Kan.; first vice president, George Wise, superintendent, Dugan-Millis, Inc., Cleveland; immediate past president, Thomas P. Mahoney, vice president, Regensteiner Corporation, Chicago.

Gimmicks, Gadgets, and Instruments—Here is the panel of Indianapolis (Ind.) Craftsmen that participated in the Gimmicks, Gadgets and Instruments session, Tuesday afternoon, Aug. 9, Intl. Assoc. of Printing House Craftsmen convention, Netherland Plaza Hotel, Cincinnati, O. The session drew a full house attendance. Participants (all from Indianapolis, Ind.) are identified from left to right as follows: Moderator R. G. Sutphin, general superintendent, The Paper Package Co.; Presiding Officer Amadeo R. Tommasini, at the time First Intl. Vice Pres. of the association, but now its president; Tommasini is superintendent, University of California Press, Berkeley, Calif.; Ed R. Daily, supervisor of letterpress and offset, Eli Lilly & Co.

In the back row, also left to right are: Eural B. Byfield, department head, Printing Dept., Eli Lilly & Co.; Roland Lambert, vice president, Service Engraving Co.; Jos. E. Bright, superintendent, Advance Independent Electrotype Co.; Glenn Pagett, superintendent, Typographic Service Co.; James Kane, foreman, Success Printing and Litho Co.

Report of this meeting will appear in the October issue of *Printing Equipment Engineer*.

gelatine side down, on a clean copper surface. Then by the use of water between the gelatine face of the tissue and the copper, and a rubber roller to squeeze the water out, the exposed carbon tissue is made to adhere to the copper printing surface . . . the paper backing of the gelatine carbon is soaked off in hot water, and developing out of the remaining gelatine begins. This is simply a washing away of the excess or unexposed areas of gelatine which are soluble. The gelatine remaining on the copper is that which is insoluble in water due to the hardening action of the light which penetrated in varying degrees through the transparent or semi-transparent areas of the positive . . .

"After development is complete, the gelatine resist is dried with alcohol and is staged or painted out with asphaltum, an acid resistant paint, to protect exposed areas from unnecessary etching by the perchloride of iron used to etch the copper after penetrating through the pores of the gelatine.

Etching the Gravure Plate

"The etching solution is applied by pouring, or with a swab of cotton, and the etching proceeds in progressive steps from deepest shadow to finest highlight for about 20 min. When completed, the etcher stops further etching by washing off all the etching solution with water . . . The image of the positive is now in the form of tiny etched cells representing the gravure screen. These square cells, which are uniform in surface size, vary in depth in proportion to the tone values of the copy, being deeper in the dark areas and correspondingly shallower in the light areas . . . All this is made possible only because the light sensitive gelatine carbon tissue becomes hardened and insoluble in water in direct proportion to the amount of light permitted to pass through the tones of the positive . . .

"This variation in depth with uniform square cells is the conventional gravure engraving process used for years by all our printers and still being used all over the world, especially for monotone gravure printing . . ."

News-Dultgen Method Described

Other engraving methods were discussed which have made inroads into conventional gravure volume especially for publication and packaging applications. Included in these was the News-Dultgen halftone method.

The conventional gravure screen is not used at all in the News-Dultgen method when exposing the gelatine carbon tissue to the positives. Instead, the tissue is exposed first to the halftone screened positive, then lifted and placed in register on the continuous tone positive. The image on the sensitized gelatine now is made up of varying sized dots, as well as variation in tone quality. This variation in tone or depth of cells in the etched copper would not be possible except for one fact. That is that the second exposure of the continuous tone positive, after exposing the opaque dot of the halftone screened positive onto the carbon tissue, permits light to harden the gelatine to varying degrees, where the opacity of the halftone dot had previously protected the tissue from the light. Transfer onto copper, developing and etching, is about the same as for conventional gravure. The combination of halftone and continuous tone positive exposures permits the etcher to again etch in graduated steps from shadow to highlight.

"The varying sized dots permit greater control in etching," Smiel said, "and for high speed printing of long runs with modern press equipment, the News-Dultgen halftone gravure process is considered to be the ideal method by many of our printers.

The Alco Process Described

"In recent years," Smiel reported, "the Alco Process, which utilizes a substitute for carbon tissue called du Pont Roto film, has been put into operation at all Alco Gravure plants. The process requires the use of only a continuous tone positive which is exposed through a magenta halftone screen in contact with a sheet of Rotofilm. This operation is performed in a darkroom since Rotofilm is an orthochromatic film . . . The light penetrating the continuous tone positive and the magenta halftone screen at controlled intervals creates a negative image in the emulsion of the Rotofilm similar in structure to the image on the gelatine carbon tissue after exposure to the halftone and continuous tone positives of the News-Dultgen method. In this case, however, only one positive is used, and the emulsion after exposure is developed in chemicals similar to those used in the average photographic process. The result is a silver emulsion negative transparency. This can be read on a densitometer and checked for accuracy . . . The dot structure in the copper is similar to News-Dultgen and printing qualities are comparable.

"The advantages claimed for the Alco

(*Continued on Page 71*)

Just before the nominating committee meeting started Tuesday night, August 9, at the Cincinnati Craftsmen's Convention, the "officials" of the evening got together on plans for handling the meeting. Left to right, they are Henry Schneider, corporate secretary, Charles Francis Press, Inc., New York, N. Y., and chairman of the meeting; Pearl Oldt, executive secretary of the International Assoc., teller; Ed Aitken, printing ink consultant, Toronto, Canada, teller; Earl Boner, Chandler & Price Co., Cleveland, O., teller; and Bill Brock, Los Angeles, teller. As it turned out, there were no riots and the boys enjoyed a comparatively calm night session.

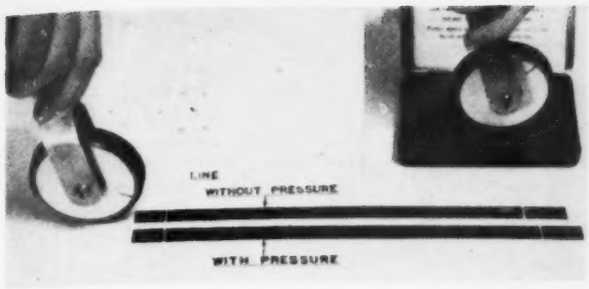


Fig. 1.

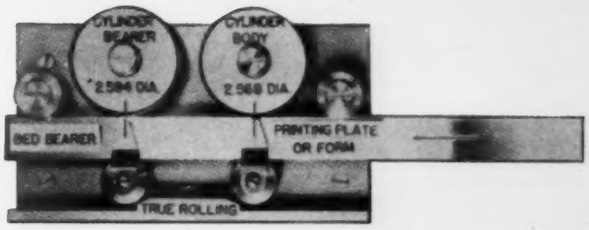


Fig. 2.—Small press model is used to illustrate True Rolling.

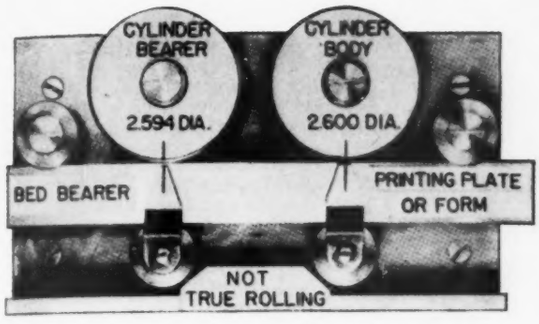


Fig. 3.—The bearer high printing height (not true rolling).

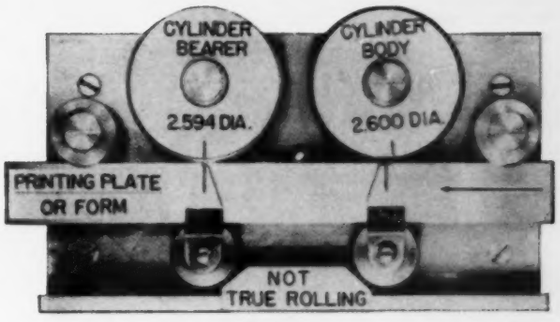


Fig. 4.

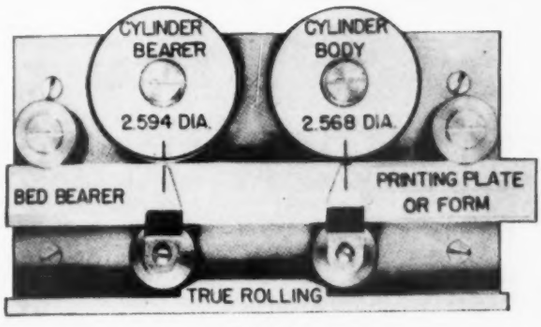


Fig. 5.

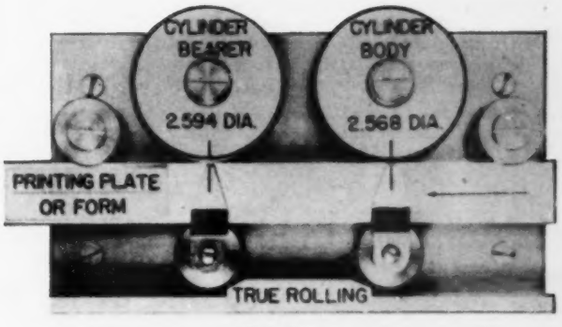


Fig. 6.

True Rolling Printing Height

By ALBERT T. KUEHN*

**Development Engineer, Miehle Printing Press & Mfg. Co., Chicago. Address delivered before Intl. Assoc. of Printing House Craftsmen, Cincinnati, O., August 1955.*

What is the correct printing height on flatbed presses?

The usual answer to this question is "The printing height is the same as the bed bearer height, both are type high or 0.918 in."

It has always been considered good pressmanship to makeready both the form and the cylinder as close as possible to bearer high. Under these conditions it was considered that both the form on the bed and the paper being printed on the cylinder traveled at exactly the same speed, (20 in. of form and 20 in. of paper).

This method locates the printing height at the height of the bed bearer and is called *bearer high printing height.*

A New Printing Height

While investigating printing problems dealing with plate wear, slurring, print length, packing creeping, etc., the Research Department of the Miehle Company found that equal travel between the plate and paper surfaces did not occur exactly at the bed bearer height position. A new printing height was found which is located above the bed bearers and below the cylinder bearers by comparatively large amounts.

Printing technicians and pressmen have field tested this new printing height under actual printing conditions. They have found that this method eliminates printing problems that are due to an untrue rolling condition at the printing line, or printing area as it is sometimes called.

The new printing height produces a true rolling condition at the printing line. This is where the ink is transferred from the printing plate to paper. At this point of transfer, synchronized travel between the two surfaces is produced by having a condition of True Rolling.

Theory of True Rolling

As the name implies, True Rolling is a condition of synchronized travel between the paper and the form while under printing pressure. True Rolling, then, is the exact condition that pressmen have been striving for.

Demonstrating Basic Principle

When looking at a printing press it is impossible to see what happens to the packing when printing pressure is applied to it. Several simple experiments made away from the press will show just what does happen when printing pressure is applied and why the cylinder diameter must be adjusted to have a condition of True Rolling at the printing line.

In Fig. 1 is shown what happens when pressure is applied to a cylinder covered with a non-compressible resilient material, like the tympan packing on a Letterpress cylinder. First the cylinder is rolled on an inked pad, then it is rolled on paper with and without pressure.

The distance between the two lines on the upper printing is equal to the circumference of the cylinder. The distance between the two lines on the lower printing is equal to the circumference of the cylinder, *plus* the

growth (about ¼ in.) of the resilient covering.

Here we note that our reasoning is not always correct. By applying pressure, we reduced the radius of the cylinder. However, the circumference of the cylinder was increased. This fact is contrary to the reasoning of many people. However, it is a factor in printing that must be dealt with, if we are to print with a True Rolling condition at the printing line. It is to be noted that when a True Rolling condition exists, there is no tendency for the coating surfaces of the roller and paper to slip or slide relative to each other. This is a phenomenon not easily understood, but nevertheless, is a fact borne out by experiment.

This demonstration brings out the fact that a resilient covered cylinder, having a circumference of 20 in. will print longer than 20 in. when 0.003 in. or 0.004 in. printing pressure is applied to it. Therefore, if we are to print exactly 20 in. long, the cylinder must be less than 20 in. in circumference. This assures that no slippage occurs between the plate and paper. Also, no paper stretching occurs.

This is the basic principle of True Rolling; it is further demonstrated by operating models of flatbed presses.

This new printing height and the bearer high printing height is demonstrated by operating the models shown in Figs. 2 and 3. These employ the printing elements of a flatbed press, which are, the bed bearer, the form and the cylinder bearer and body. The cylinder bearer and body are separated so that the rolling action at the printing line of each can be studied, under both Non-True Rolling and True Rolling conditions.

In Fig. 3 is shown the steel cylinder bearer firmly contacting the steel bed bearer, which is mounted on free turning rollers. The cylinder body covered with a resilient material, like tympan packing sheets, is adjusted to the form with 0.003 in. printing pressure. The centers of the cylinder bearer and the cylinder body are now an equal distance from the bed bearer and the form. The cylinder body is 0.006 in. larger than the cylinder bearer. Therefore, 0.003 printing pressure is exerted against the form which is the same height as the bed bearer.

The lines on the cylinder bearer and body are matched with the lines on the indicators below. The bed bearer is then moved in the direction of the arrow until the bearer makes one complete revolution.

In Fig. 4 is shown the position of the cylinder body after the cylinder bearer turns one complete revolution.

The bed bearer and form moved in the direction of the arrow. The difference between the lines (about ⅛ in.) on the cylinder body and the indicator below it is caused by the stretch and deformation of the resilient covering. A sheet being printed would undergo a similar action.

On a printing press the cylinder bearer is fastened to the cylinder body and both must turn exactly one revolution. Under these conditions slipping or stretching must occur, thereby creating a condition at the printing line which is not True Rolling.

Now in Fig. 5 the cylinder body is 0.026 in. smaller than the cylinder bearer. The cylinder bearer is firmly adjusted to the bed bearer. The cylinder body is set to the form with 0.003 in. printing pressure. The lines of the cylinder bearer and body are matched with the lines on the indicators below.

In Fig. 6 is shown the position of the cylinder bearer and body after the bed bearer and form moved in the direction of the arrow. Both the bearer and the body rotated exactly one revolution. This condition on a printing press, where the cylinder bearers are fastened to the cylinder body, is called True Rolling.

Practice of True Rolling

The new printing height was found under actual printing conditions on different diameter cylinders of presses. These new printing heights are as follows:

	In.	In.	In.
Bearer diameter....	18½	21	24¾
Form height.....	0.918	0.918	0.918
Bed bearer height..	0.903	0.906	0.907
Printing pressure..	0.003	0.003	0.003
	0.004	0.004	0.004
Position of printing line above bed bearer and below the cylinder bearer.....	0.015	0.012	0.011

The new printing heights reduce packed diameters of the impression cylinder by comparatively large amounts. These smaller body diameters compensate for the normal stretch and deformation of the cylinder packing while under printing pressure. This provides for synchronized travel between the paper being printed and the inked form. This is a condition called True Rolling in practice.

Summary:

In theory, when the printing height is bearer high (0.918 in.) and the cylinder is packed equal to or above the bearers, a condition exists at the printing line called Not True Rolling.

In theory, when the printing height is above the bed bearer a determined amount and the cylinder is packed below the bearers, the condition existing at the printing line is called True Rolling.

Letterpress Clinic Considers Some of its Major Problems

One of the most interesting sessions at the recent International Craftsmen's Convention in Cincinnati in August was that entitled *Solutions to Some Of Our Letterpress Problems*. Instead of attempting to cover the entire letterpress printing field in one relatively brief session, subjects selected for discussion were what might be considered important to the letterpress printing process. A goodly number of printing executives were present and much interest was shown in all of the subjects discussed by the speakers.

Gradie Oakes, president of the Process Color Plate Co., Chicago, and Chairman of the International Advisory Council Committee, opened the meeting with suitable remarks. He then introduced Moderator J. Homer Winkler, also an International Past President and Technical Advisor to Battelle Institute, Columbus, O.

Chairman Winkler introduced the first speaker, Phillip Evanoff, sales service engineer, The Mead Corporation, who discussed *The Relationship Between Paper Surfaces and Printability*, with respect to the letterpress printing process itself.

Evanoff said, "Items such as smoothness, softness, cushion, receptivity, etc., are commonly used in discussing whether or not a certain sheet is doing a good job. However, there is still much confusion not only as to just what these various terms mean, but also in regard to their relative importance in obtaining the best results." As the speaker's discussion progressed, it became apparent that he wanted to reduce definitions of the above named paper qualities to a language which would be common to both the paper maker and the printing executive including the pressmen in the printing plant.

Evanoff explained that in an effort to determine just how much effect the various well known characteristics of letterpress paper have on the printed results and also to define them more clearly and more specifically, Mead Corporation made a study of a wide range of papers exhibiting great variation in various well accepted properties, and measured this variation against their letterpress operations. These were all coated papers ranging from very high quality conversion coated sheets to the lowest priced machine coated groundwood stocks.

He explained that there were 11 sheets in all and these were carefully graded for smoothness, levelness, cushion, coverage and ink receptivity. These papers were all printed on a large flatbed press with a range of forms extending from large solid areas through heavy to medium to very light halftones and type. They were also printed on a small flatbed and on a proof press with controlled inking. Evanoff explained that at the very beginning of the operation of pulling proofs to determine how to proceed with the makeready, samples of all the sheets involved were run through the press. Using the results with the poorest sheet as a guide, the makeready was adjusted with small changes, printing all of the sheets after each change. In all, 12 adjustments of the makeready were made until the poorest sheet was printing as well as could be expected. He said that even when the final adjustment of makeready had been made to give the best possible result on the poorest of the sheets, there was still a wide range of printing quality among all of the sheets.

Through the use of slides, Evanoff commented about the characteristics enumerated and the instruments used to determine the characteristic.

No doubt, at a later date, the results of these studies together with the results of additional studies will be made available generally to the industry.

Minimum Makeready Through Precision Methods

O. F. Duensing, sales development manager, Vandercook & Sons, Inc., discussed *Minimum Makeready Through Precision Methods*. He led off with the statement: "I wonder how many of you find it difficult to understand how an industry as old and as big as letterpress, which has produced more fine printing than any other process, could neglect itself to the point where it cannot compete as successfully as it once did with other printing processes."

Duensing then explained a number of the items with which letterpress printers must contend and which are expensive operations in letterpress operation. He continued:

Letterpress Clinic Considers Some Problems of Major Interest—At the Cincinnati Convention of the Intl. Assoc. of Printing House Craftsmen, Netherland Plaza Hotel, August 8, a panel of speakers addressed a goodly audience. Shown above (left to right) the speakers are identified: George F. Rooney, jr., president The Winton Engineering Co., Cincinnati; Roland I. Drake, technical advisor, Champion Paper and Fibre Co.; Albert T. Kuehn, development engineer, Miehle Printing Press and Mfg. Co.; O. F. (Fred) Duensing, sales manager, Vandercook & Sons, Inc.; Phillip Evanoff, sales service engineer, The Mead Corporation; speaking at the microphone is Moderator J. Homer Winkler, technical advisor, Battelle Institute, Columbus, O.

"One of the biggest expense items is makeready. When you consider how little progress has been made in reducing makeready it would seem that the different elements that cause makeready are beyond control. Anyone can itemize every single operation and manipulation at the press which is chalked up against a job as makeready."

To illustrate, he said: "Let us suppose you were printing a standard mixed form with wood mounted plates. The makeready would fall into no less than three distinct groups. The first would take in all such operations which have to do with the setting of the press to get it ready for the job. The second group would include makeready against the compression of wood mounted plates and all dimensional inaccuracies in the plates, makeup and lockup. Finally, you would have some makeready to compensate for impression errors and bear-off in the press itself.

"The only one of these three groups which you can consider absolutely essential is the first one, because it covers all those makeready operations which must be performed before a job can be run—such as inking up, packing the cylinder, setting the feeder and guides, the delivery, and so on. The other two makeready groups cannot be regarded as entirely necessary, for the primary reason that they compensate for conditions and variables in the form and in a press and, therefore, can be largely eliminated before a job reaches the press."

Duensing then queried the audience with, "What is the answer?" He explained that after considerable research at the Vandercook Laboratories, the overall conclusion was arrived at that what letterpress needs is (1) An industry-wide adoption of more precision methods, and (2) A critical evaluation of all those outmoded methods which no longer serve the needs of letterpress printers.

He then explained the Vandercook Lite-Base. He quoted a number of printing plant executives who are using the Lite-Base for mounting cuts as having cut makeready time from 15% to 30%.

The speaker asserted that, "Composing room men must adopt or be taught more exacting methods, including more critical inspection and maintenance standards of typecasting machines, matrices and molds. Certainly, all machine type should be measured at regular intervals during the day. All composing rooms should be equipped with one or more precision type gauges."

Continued Speaker Duensing: "Makeup and lockup are two more letterpress operations that need modernizing. The only way a compositor can gauge either the squareness or the size of a page is to press the material into a corner of the galley with his fingers and measure with a line gauge." Then he asked: "How can we expect compositors to produce any degree of accuracy in makeup with methods so inaccurate?" Any page which seems square under finger pressure may develop all sorts of distortion under the pressure of quoins. The lockup man is in just as big a quandary. He spends hours of time adjusting forms to overcome errors in measurement and justification. Only by the long process of repeated locking, measuring, unlocking and adjusting does he finally get a form that lifts, let alone that is ready for printing. Duensing then discussed a precision makeup gauge that is so accurate in makeup that page after page made up in it will be exactly alike in size, in perfect alignment and perfect register, and all justified to lift to uniform lockup pressure.

Further comment from the speaker was to the effect that another cause of many unnecessary delays in the pressroom is the inaccuracies which result from presses running year in and year out without so much as even occasional inspection and adjustment. One of these defects, most frequently ignored, is that of checking the accuracy of impression on cylinder presses. The most efficient way to make an impression check is to fill the bed of the press with special impression gauge blocks. These gauge blocks are 3 in. by 3 in. by 0.918 in. in size, made of aluminum alloy and are accurate within a plus or minus height tolerance of 0.0002 in. A carbon impression of these gauge blocks is made ready and hung deep in the packing next to the cylinder as a semi-permanent correction of the impression defects on the press checked.

Duensing explained the Vandercook Minimum Makeready Method. It consists of inserting a sheet of light weight carbon paper, large enough to cover the printing area of the form, face down on the fifth sheet of the manila packing.

Approximately 10 sheets of the stock to be printed are then run through to get the carbon impression of the fifth manila, which shows up any differences in the form due to height variations or bear-off. To do this, you do not ink up the press. He commented: "And, incidentally, you cannot use this Minimum Makeready Method in connection with wood mounted plates."

True Rolling Printing Height on Flatbed Letterpresses

Albert T. Kuehn, development engineer, Miehle Printing Press & Mfg. Co., spoke on the subject of *True Rolling Printing Height on Flatbed Letterpresses*. A general summary of his address with slides reproduced in miniature form is published in this issue of *Printing Equipment Engineer*.

How to Cope With Paper Variations

Ronald I. Drake, technical advisor, Champion Paper and Fibre Co., spoke on *How to Cope With Paper Variations*. A general summary of his address appears in this issue of *Printing Equipment Engineer*.

Offset Eliminators for Letterpress Operations

The final speaker on the Letterpress Clinic was George F. Rooney, jr., president, The Winton Engineering Co., Cincinnati, O. The subject of his address was *Offset Eliminators for Letterpress Operations*.

The speaker reviewed the history and development of offset preventing devices and the purposes for which used—that is, the different kinds of printing applications.

One suggestion the speaker made was high spots of ink which tend to offset have been eliminated by many printers who have found the use of a fountain agitator helpful. The internal gear oscillating roller has proved popular when used to supplement the press rollers in achieving an even layer of ink.

He also mentioned that static eliminators have proved helpful when overcoming the clinging tendency of freshly printed sheets when placed in a pile.

Rooney's predictions for wet sprays in the future were to the effect that airless spraying such as is now used in some spray painting applications will be adapted to the Graphic Arts industry. In the airless spray method, the paint is forced out of the nozzle under high pressure and temperature, and the particles atomize due to the sudden release of internal pressure. The speaker's prediction for dry sprays were to the effect that powder will have more uniform grain size, better chemical treatment to reduce moisture content and static charges. There will also be better protection of air lines with electrical strip heaters to avoid condensation, and better powder storage conditions.

Members of the Craftsmen's Convention Bindery Clinic at the Wednesday afternoon, Aug. 10, session included (left to right) Mortimer Sendor, Sendor Bindery, New York, N. Y.; Albert L. Kolb, International third vice president, presiding officer of the session; Fred P. Hofferth, American Book Co., Cincinnati, O., moderator of the session; Frank Myrick, editor, *Book Production Magazine;* and James B. Blaine, John F. Cuneo Co., Chicago. William Weisgerber, Pittsburgh Bindery, Pittsburgh, Pa., another member of the panel, was not available when this picture was taken.

Trade Binders Tell Printers How To Get Less Costly Work

Craftsmen attending the Bindery Session of the 36th annual convention of the International Assoc. of Printing House Craftsmen, Inc., Cincinnati, came away with at least one distinct impression: The printer and the binder must co-operate in teamwork in order for each to operate most effectively.

The bindery session took place Wednesday afternoon, Aug. 10. Presiding officer was Albert L. Kolb, International third vice president; moderator was Fred P. Hofferth, production manager, American Book Co., Cincinnati, O.

Frank B. Myrick, editor, *Book Production Magazine*, gave the first talk of the session, *Genius at Work in the Bindery*. He subtitled his talk, "Gimmicks, Gadgets & Gizm os."

"I'd guess," Myrick began, "that the most compelling force in the bindery today is the necessity for eliminating costly hand labor, which has been the earmark of bookbinding since man first began sewing pages together with leather thongs . . . Let's look into an imaginary bindery to see what changes have been made to simplify production. To begin with on the flat cutters, we find automatic spacers, extension tables, skidlift, power back gauges, improved and magnified scale reading, power and hydraulic clamp action, and feathertouch control of the knife itself. Designers of the various trimmers have gone a step further and provided means of automatic feeding of the piles of books, such as on the Brackett, Rapid and Seybold trimmers. I don't believe that I am far wrong in predicting that in not very many years, we will see a device applied to such cutters, against which a skid of paper or uncut books may be moved, and mechanical arms plunge forward to grab a load of sheets or books and move them into position mechanically for cutting or trimming.

"In the folding department, we find folders equipped with additional sections so that a greater number of parallel folds can be delivered. In some shops . . . conveyors deliver finished signatures to waist level, making it easier to stack or band finished work.

"And in case of trouble, such as a choke or jam on the folder, micro-switches at advantageous locations have eliminated unnecessary spoilage created while the operator races to the throw out knob or the stop button . . . the bindery has found that steel fingers can be as deft as feminine ones and the day may not be far away when a woman's touch will be missing from the gathering department. Both here and abroad, emphasis has been laid the last few years on ways and means of feeding signatures to stitcher chains and the like. And of late the machinery manufacturers have, as well as binders themselves, discovered that considerable valuable space is wasted on horizontal layouts, and have been casting glances ceilingward. Thus two or three vertical type collators or gatherers have made their appearance. Even the revolving table of earlier fame has returned to the scene, now with several decks of bins, in one case. . .

"How do machinery manufacturers feel about suggested changes in their machine? Time was when they were a bit edgy on the subject, and felt that independent engineering was a reflection on their ability.

"Today it's a different story—they'll gladly listen to you. . .

"Machinery manufacturers are also being driven to develop new heights of ingenuity by competition from foreign sources. Thus we find swing-away feeding stations for gang stitchers, semi-automatic covering machines, hand operated and semi-automatic adhesive binding machines, among the more interesting products now being imported."

Relations of Printer and Binder

William Weisgerber, manager, Pittsburgh Bindery, Pittsburgh, Pa., spoke on the subject which actually recurred throughout the bindery program: *The Relations of Printer and Binder*.

Weisgerber made the important point that the teamwork between the printer and the binder is absolutely essential if both are to function most effectively. Two very important things the binder wants to know from the printer about any job are (1) Timing of the job and (2) Specifications of the job.

Weisgerber strongly recommended that printers call in their binders for advice before the job is actually put on the press. Often the binder may be able to suggest ways to avoid headaches later in the binding operations. Sometimes the binder can make suggestions which result in savings that make savings on a small thing like paper seem unimportant.

Estimating Binding Costs

Mortimer Sendor, Sendor Bindery, New York, N. Y., spoke on the challenging subject of *Estimating in Pamphlet Binding*. Sendor listed some of the various means of estimating production costs: "First there is the man or firm which subscribes to or buys standard publications or texts on the subject and follows the simple procedure contained therein to arrive at an estimated cost. Second, there is the method of finding the approximated costs for each operation in the binding that the competition is charging and put together a price in this fashion. Thirdly, one can ascertain production rates of various pieces of equipment in his shop, combine these rates with weekly or hourly labor costs and then multiply these answers by a standard fixed amount to take care of all other expenses to arrive at a production cost. A fourth method is to again study and

Club Management Luncheon Speaker, Ben Ebersole, San Francisco Club, is delivering his talk on the *Table Host* idea. Other speakers at the luncheon were (left to right) Herbert Livesey, executive secretary, National Assoc. of Printing Ink Makers; Ferd Voiland, jr., International second vice president, who presided at the luncheon; and William Gutwein, chairman, International Supervisory Training Committee. The club management luncheon took place on Monday, Aug. 8, at the Craftsmen's convention.

arrive at production rates for the various equipment and hand processes and then also somehow have calculated an all-inclusive hourly rate for each piece of equipment and hand processes. After all of this involved work is accomplished it then becomes a simple matter to multiply a production rate by an hourly cost to produce an estimated price for your own plant. . ."

Estimator's Job Complex

Sendor did not recommend any one system as being the right one for all plants. But he did point to several things which the estimator of any plant doing pamphlet work must know in order to do his job properly. "First and foremost an estimator in pamphlet binding must know pamphlet binding. Not as simple as it sounds. The man who assumes the responsibility of estimating must know the obviously simple operations, he must also know some of the tricks of the trade, some of the short cuts in addition to a very good knowledge of average production figures for all the bindery equipment in the plant."

Sendor then went into detail on figuring average production figures for each piece of equipment performing the bindery operations—sheet cutting, folding, saddle stitching, side stitching, gathering, tipping, cover gluing, smashing, book trimming, smyth sewing, and such miscellaneous operations as banding, tying, packaging, packing, mailing, and sealing. While he recognized that no two jobs are alike, no jobs are ever completed in the exact over-all time, yet, he said, an over-all or average production rate for each operation can be established.

"Once the production rates are established and to be meaningful it must be combined with a labor and overhead rate plus the cost of material to become an estimated cost. . .

"With all the pressures that are built up in our offices," Sendor concluded, "it is too easy to try and take short cuts. I have no disagreement with a short cut providing the answer and information has been previously worked out. But to merely blind guess or use some other person's judgment without checking is not only inviting trouble for your own firm but also hurts everybody else who is honestly and fairly competing."

Better, Faster and Cheaper

James B. Blaine, executive vice president, John F. Cuneo Co., Chicago, spoke on the subject of *Some Suggestions for Faster, Cheaper, and Better Binding.*

He said: "I would like to explore five items that, if followed in your contacts with binders, should enable you (as printers) to get cheaper, faster and better bindings from them.

"Most important of all is—*consult your binder first.* My experience as a binder has taught me that most of the problems between printer and binder could be eliminated if the binder were consulted in the first planning stages of the job. Here are some of the points to consider in planning with your binder: (1) Folding imposition. Since binders' folding equipment varies, your binder needs to know the weight, size, kind, and grain of paper you propose to use. He can then give you a layout that will fold most economically on his equipment. (2) Your binder wants to do *all* your binding operations . . . Many a binder's headache has come from the 'helpful' printer who cuts sheets, tips, and covers, all too often to the exact trim size of the finished book. (3) As a minimum, it is best to buy your paper squared one side and one end. This is especially true if the head margins are run to the side guide. (4) If a job is made of multiple printed sheets, be sure to divide your paper evenly for each form. A book of two or more sheets will make a total count equal to the lowest number of sheets printed, less normal spoilage. There is often a nice profit in equal division of paper. (5) If you have allowed ⅛ in., 3/16 in., or ¼ in. head trim, then all tips, covers, or any other items that go into or onto the book must have this same head trim allowance."

Give Exact Instructions

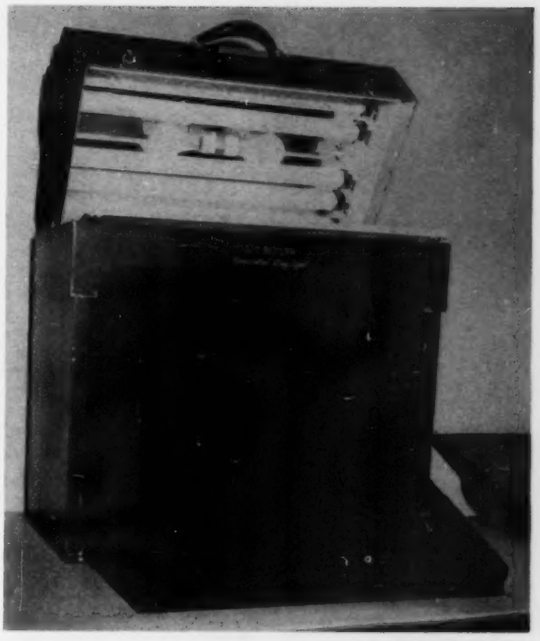
Blaine then listed the four lesser considerations in getting faster, cheaper and better binding. "Give your binder exact instructions. In this case, exact instructions mean written instructions. Your binder wants to know these things about your job —title, quantity, number of pages, trim size, margins, special insert or tip instructions, if any, how the job is to be packed and where and how it is to be shipped."

Further instructions you should give your binder: "Send along a dummy whenever possible. If advance copies are needed, send your binder the necessary sheets in a separate package. Finally, take nothing for granted. You cannot give your binder too much information about the job."

Blaine's third major point was "Prepare your loads of flat sheets properly for delivery to the binder. Be sure no nails have raised their ugly heads in the skid. Then cover the platform with cardboard or several sheets of paper. Be sure the skid is larger than the sheets piled on it. Have the sheets properly jogged. If there are any guide changes, bad printing, or other errors that need the binder's attention, put a flag on the load and write instructions in plain English. Put a load ticket on each skid showing title, customer's name, job number, form number, folio number, number of sheets and date. Do not pile too many sheets on a skid, especially in color work. Too much weight makes the sheets stick together."

The fourth main consideration, said Blaine, was "How to prepare a skid of folded sections for delivery to the binder. The ideal way is to send folded signatures to the binder in bundled form. This means you need a bundling press, end boards, and ropes. Since that is impractical in many cases, reverse each handful of sections and make the piles 15 in. or 16 in. high. Put wooden platforms or cardboard or several sheets of stiff kraft paper between each layer."

Blaine's fifth item for the printer to consider in getting cheaper, faster and better bindings was the odds-and-ends item: If a job carries a consecutive series of numbers, find out whether your binder wants the first or last number on top of the stack. If a job containing black halftones must be hurried through the bindery, use an ink that dries with a hard top. If a job must deliver a full count, be sure to inform your binder of this fact. Most of the time an over or under count constitutes full delivery."



The Butler Trulite shown in the accompanying illustration is in use in a well known and prominent magazine printing and publishing plant. It is used for examining, checking and matching colors. The Butler Trulite is specially designed to emit the various light rays necessary to produce a close approximation of blue sky sunlight.

The unit contains specially processed fluorescent type lamps, each of which produces intrinsically one of the colors except red that compose the daylight spectrum, *i.e.*, violet, blue, green, yellow and orange. Red of adequate quality and quantity is supplied by special incandescent lamps contained in the unit. Luminous efficiency of the unit is said to be high as it contains no filters and the heat factor is correspondingly low. Total wattage of the 24 in. shadow box unit is 240 w.; the 48 in. unit consumes 540 w.

States the sponsor: "There is only one sure way to accurately distinguish slight differences in hue and saturation and in achromatic colors. This is by means of light which is: (1) Constant and invariable, and (2) Light which is composed of approximately equal energy distribution of all the colors or rays contained in blue sky sunlight.

"The same quality of light must be used at every step in the process where colors are checked and examined. It is misleading to examine a color at one step, in a process, by light through a dirty window on the fourth floor facing a red brick building to the North with its facade facing South. And then, at another step by the light from a window much higher up on another floor. Then, at some further step examination is made with an inadequate combination light source. In other words, it cannot be too strongly emphasized, and at all steps in a process where colors are matched or examined, that the light should be constant and identical."

In the illustration, it will be noticed that the light unit consists of fluorescent and incandescent lamps. The light unit is hinged to the top of a portable shadow box. When in use, the lid is lowered on the shadow box.

The shadow box was specially made for desk or table top use. The easel is adjustable for viewing convenience. The inside of the shadow box and the easel have been painted black to avoid any reflection from surrounding or outside light. For further information, please mention PEE No. 536 in your request.

How To Cope With Paper Variations

By RONALD DRAKE*

**Champion Paper and Fibre Co., Hamilton, O.*
Abstract of address delivered before convention of Intl. Assoc. of Printing House Craftsmen, Cincinnati, August 1955.

Evidently, like the poor—we have "paper troubles" with us always. And strangely enough their basic character has not changed. We can divide them into four broad categories as follows:

(1.) Printing quality—(surface effect)
(2.) Strength—(picking, splitting, tearing, folding, etc.)
(3.) Foreign material—(dust, lint, part sheets, extraneous material)
(4.) Relative Humidity Effects—(atmospheric - internal)

There seems to be a marked increase in the number of complaints dealing with the general printing surface quality of papers. While undoubtedly part of these complaints are fully justified on the basis of paper quality, I do submit that much more of it is the result of pressroom conditions and/or policies.

Part of the shortening of proper makeready time is in spotting up. This scrimping will emphasize what is in reality only a nominal variation in flatness of surface and causes the printer to claim poor printing quality. The paper maker is more often than not at a distinct disadvantage when this occurs because few of them understand makeready problems well enough to recognize the cause of the results shown. They only know that their paper is as near uniform as they know how to make it—both from side to side, throughout the run and from run to run.

Caliper Variation

Another factor which is causing papermakers some concern also ties in with the scanty makeready picture. It has to do with some printers' complaint of caliper variation when such variation is mostly less than 0.0005 in. Such cases actually have happened. Coated paper of 80 lb. basis will nominally caliper about .004. On the average its weight may vary from 76 lb. to 84 lb. and its caliper from 0.0038 in. to 0.0041 in., a range of 0.0003 in. Actually, the caliper will run about 0.0037 in. to 0.0042 in. or a variation of 0.0005 in. Assuming this to be true, what then is the thickness of the thinnest tissue used for spotting? I've found nothing thinner than 0.001 in. being used. Also added to this is the fact that some impression is required to print, say 0.003 in. or even 0.002 in. So why the fuss over a perfectly nominal paper thickness variation which has been in effect for a long, long time?

Another consideration is speed and its effect on paper. As we increase speed (impressions per hour) on our modern sheet-fed rotaries or roll-fed presses, we also change the print quality. The centrifugal force of the cylinders tends to pull them off impression and so as speed of a given press increases, print quality decreases. We should stop and spot up for this. But, do we? No, the papermaker just has another complaint.

Picking Strength of Paper

Next on the list of troubles is strength. We still have picking complaints. The picking strength of today's papers, especially coated, is many times what it was 20 years ago. It simply has to be. Presses run faster, inks are tackier, more gloss in the finished job is required, and so on.

Actually, most of the reported picking complaints we receive are not picking at all but some form of dust or lint from some source. Careful examination with the handglass of the white spots found in the printing of solids will quickly show where the surface of the paper has been disturbed; *i.e.*, "picked out". If actual holes show, then there is some possibility that reducing the tack of ink, within the limits of finished job requirements, may get you out of trouble. By reducing the tack of the ink, I don't mean pouring kerosene or other similar liquid or greasy reducer materials into it. I mean, have your ink man reformulate your inks on a softer body. Much lost presstime can be avoided that way. Furthermore, the ink man can usually tell you whether the ink can be reduced sufficiently to get out of picking trouble and still produce a satisfactory job. If it cannot, send for your paper supplier quick and save both of you time and money.

Accolade To Morris

Trade press editors have reason to be grateful to the International Association of Printing House Craftsmen. The reason is that the Association maintains a press relations room at each of its annual conventions. This year at the Cincinnati convention, the bureau was in charge of Charles V. Morris (now associated as assistant to the president with Reinhold Gould Corp., New York, N. Y.) During the August convention at the Netherland Plaza Hotel, Morris took care of the interests of no less than 49 Graphic Arts publications. He supplied copies of speakers' papers and official photographs, for which he kept a photographer busy throughout convention days. Up early and late (long hours made no nevermind to him) he was uniformly courteous and accommodating to anxious editors and reporters. He made their work much lighter and enabled them to report speakers accurately.

Splitting or Peeling

Another phase of picking trouble is splitting or peeling of the sheet. While this trouble is almost entirely confined to the lithographic industry, it does occur in letterpress work also. The best answer in such circumstances is to send for your paper man. He can best advise you on whether to attempt ink and press adjustments or supply a new lot of paper.

Folding and Tearing

After the above strength problems come those of folding and tearing in the bindery operations. These get pretty rough at times, for the job has been printed and sometimes cut to size—and the delivery day is just around the corner. The greatest help in such times is moisture, for believe it or not, we rarely receive a complaint of poor fold quality in the spring, summer, or fall months. They start in about November 1st and last until April 1.

The third class of paper troubles is classed as foreign dirt effects. Sometimes the source is *not* the paper. But when it is the paper, some things can be done to help.

Paper Dust or Lint

Dust or dirt or lint causes white spots in printing which can be identified as such because there is no picking out of the coating. The way to do this and to do it right is to select one of the white spots and go back through the printed pile until the original sheet containing the spot is located. This original sheet tells the story in unmistakable language. If true dust, dirt, or lint, its character is identified by the shape of the spot and also some clue is given as to its source.

Paper dust or lint is nearly always due to a cutting operation of some sort. It may be from slitters, sheeters, or guillotine trimmers. When due to slitters or sheeters, the dust or lint is usually distributed over the surface of the sheet and can be found by wiping between the sheets (not the top one on a load) with a dark cloth. Dust from the guillotine trimmers is usually due to a dull knife or a bad stick and is present on the edges of the load. When so present the riffler blasts on the feeder blows this dust between the sheets.

This indicates the need for checking the source of dust and lint on a load not yet in the press. If the dust is between the sheets, some relief from trouble can be secured by changing the brush to a new and/or clean one, or covering the present brush with a piece of felt or velvet, which has been lightly rubbed with glycerine.

If the dust is on the edge of the loads, then a vacuum cleaning of the edges gives considerable help.

But not all dust spots come from paper. The pressroom contributes its share. There are spots from spray, from dust off the ceiling or fixtures, from the job on the next press, or from the street outside the open window.

The Case for Air Conditioning

Fourth and last class of paper variation troubles are those associated with atmospheric conditions, especially relative humidity. Some day soon every printing plant in the country worthy of the name will be fully air-conditioned. This includes the trade binderies too.

Since paper owes its very existence to its affinity for water, it is readily apparent that the moisture content, *i.e.*, relative humidity of the surrounding atmosphere, must be controlled if paper is to function properly. Curl, wrinkle, register, stretch, shrink, tear, fold, all are tied to moisture content, and it is therefore vitally necessary that the relative humidity of the pressroom and bindery be controlled if optimum performance is to result.

It has been shown, too, that in those plants which are wholly air-conditioned, production has increased because of better performance of paper, ink and rollers; also the efficiency of the employees is better and there is less absenteeism due to colds and other health reasons.

Major Processes Are Utilized By Package Printers

Package Printing Clinic Panel Members—The following executives spoke at the Package Printing Clinic, Intl. Craftsmen's Convention, Cincinnati, Hotel Netherland Plaza, August 10. From left to right they are identified as follows: Ernest C. Wells, Lawson Lithographing and Folding Box Co., Ltd., Montreal, Can.; J. M. Kernan, general superintendent, Ohio Boxboard Co., Rittman, O.; Walter E. Sooy, senior vice president, The Gardner Board & Carton Co., Middletown, O.; Wilford L. Romney, technical director of Packaging, The Proctor & Gamble Co., Cincinnati, O.; R. J. Jones, manager, Packaging Div., The Dobeckmun Co., Cleveland; Delmore Moffett, superintendent of printing, The KVP Company, Kalamazoo, Mich. Presiding Officer A. E. Price, The Ander Chemical Co., Cincinnati, was not available when this picture was taken.

At the well attended *Package Printing Clinic* held during the Craftsmen's Convention, Hotel Netherland Plaza, Cincinnati, Wednesday, August 10, in addition to the presiding officer and moderator there were five speakers. Presiding officer was A. E. Price, sales manager, The Ander Chemical Co., Cincinnati, O. Moderator was Walter E. Sooy, senior vice president, The Gardner Board & Carton Co., Middletown, O. During the discussions by the various speakers it became evident that all three of the major printing processes (letterpress, gravure and offset) are used in the package printing field. Each speaker explained how a given process was being used to produce packaging material in his plant.

The first speaker to be introduced was Wilford L. Romney, technical director of packaging, The Proctor & Gamble Co., Cincinnati, O., who spoke upon the subject *What the Package Buyer Wants from the Printer*. Romney explained that in some cases the package buyer and the printer cannot always coordinate their objectives by getting together for an analysis. The buyer should have a good reason for what he wants—and he does have. In general, Romney observed that the buyer expects the printer to have an open mind and extend cooperation with respect to the kind of product which is wanted. The printer should not "know it all." In all cases he should ask the buyer about specifications which he doesn't understand.

Foundation of Quality Carton Printing

The next speaker introduced by Moderator Sooy was J. M. Kernan, general superintendent, Carton Division, Ohio Boxboard Co., Rittman, O. Kernan's subject was *The Foundation of Quality Carton Printing*.

Kernan's address consisted of a most thorough analysis of the desirable qualities to be found in carton stock when received from the mills.

According to Kernan, the printability characteristics of boxboard are the most important factors in obtaining good multicolor carton printing. A poor print job will seldom be turned out by the printer if the board has the proper physical characteristics for the job to be done. With respect to ink troubles, register problems and personnel deficiencies, for the most part these conditions are controllable by a program of pre-presstime checking of inks and plates and proper supervision during the run, backed up by a systematic inspection procedure.

"Our board mills have made tremendous improvements in the last 10 years that have helped our printability," said the speaker. But I don't feel that we have analyzed our letterpress process sufficiently well to intelligently specify our needs to the board mill operators and I don't think we have given them a good picture or reason for these needs.

Kernan referred to the setting up of a coordinating plan at Ohio Boxboard. This plan constitutes a fairly comprehensive study of the board, ink and press relationship problem. He also referred to a large chart on the platform. The chart was prepared by Ken Strachar of R. R. Donnelly & Sons Co. The chart showed in sequence what qualities are necessary to make up good boxboard so as to permit quality printing. The speaker said he believes Formation, that is, the interlocking arrangement of fibre or fibre bundles and the relative softness of the actual fibres, contributes the greatest single effect on good printability. A well knit sheet of relatively soft fibres will take ink better than a loose knit sheet of hard fibres. Only controlled tests and inspection procedure could detect the diff-ence before printing presstime.

With respect to smoothness, the lack of which usually is caused by wire and felt marks, this quality is second only from the printer's standpoint to that of poor formation. He continued: We can print out felt marks with some degree of success and opaque inks can do a pretty good job in hiding wire marks. If inks are transparent or semi-transparent and wire marks are noticeable, we are in trouble. Poor printing results in spite of impression manipulation and heavy ink film.

"Minimum caliper variation and levelness are certainly desirable. Both can affect press feeding, particularly on high speed rotary presses and lack of levelness in particular can contribute to offset and curl."

The next quality to be discussed by Kernan was that of compressibility and resilience of the stock. He asserted this is an extremely important board specification that in general has been either completely overlooked or ignored by the carton industry. There is no standard test in the industry for compressibility or resiliency.

"In the last year," he continued, "we have had no trouble on halftone work on patent white or bleached manila board regardless of caliper variation. We attribute this primarily to proper pulp selection, good formation and compressibility of stock. We do not hesitate to run our halftones at 6 to 8 pts. of impression on 0.020 in. stock and as high as 12 pt. on 0.026 in. stock, printing 100 line screen. The caliper variance on some runs of 0.026 in. has been as high as 6 pts. without any marked effects on the halftone printing."

The next element discussed was that of maximum allowable and minimum impression required to print. In the theory of ultimate smoothness the absolute maximum allowable impression is that which is just within the limits of the maximum stress that a press can take. Fortunately, there is little likelihood of coming too close to the point of overstress for we will greatly affect our print if we do.

Among other difficulties discussed were those of trapping, indenting the board and sharpness. Trapping becomes faulty if there is unreasonable impression on second down and successive colors. It can also become faulty by excessive pressure on first down colors. We will score or indent the board creating an uneven contour to successive colors. Sharpness is lost with excessive pressure. Line work feathers or halos on the edges and halftone dots muddy up. We will pick up shoulders of plates. If the condition prevails, all plates begin to show excessive wear.

Regarding the minimum pressure required, the speaker explained that halftones constitute a much greater problem than solids. Good halftone reproduction requires greater impression than would normally be used on solids. The degree of impression depends upon the magnitude of the variances of the contour group—those of caliper, levelness, smoothness and formation.

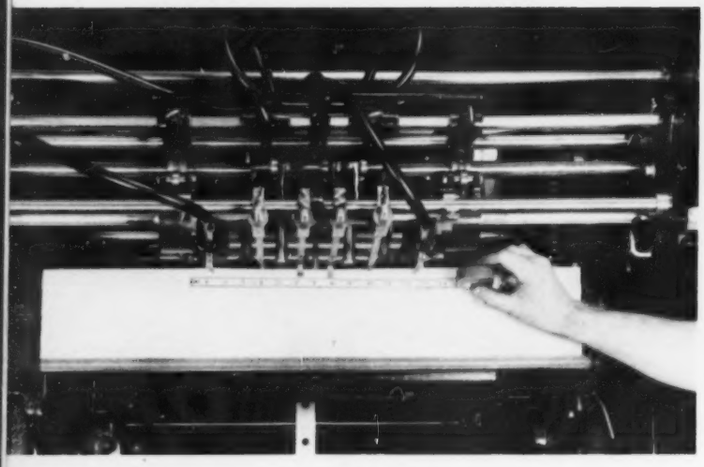
Kernan stated: "The cushioning effect of compressible board reduces the need for high impression pressures. The cushion of compressibility allows for the addition of more packing and/or increase of plate height so as to overcome surface contour irregularities. It is a cushion, however, that does not disturb trapping nor sharpness of print but it allows you to reach an ultimate smoothness for a good print."

Flexographic Printing of Films and Foils

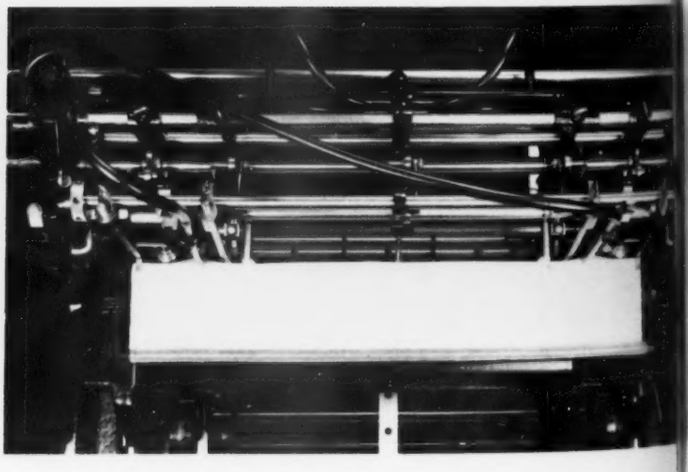
Flexographic Printing of Films and Foils was discussed by R. A. Jones, manager, Packaging Div., The Dobeckmun Co., Cleveland. The flexographic process is one by which you print anywhere from one to four colors on a moving web on a rotary type press having a rubber printing plate and a very liquid type of ink. Basically, the ink is of the shellac type. The color, either pigment, dyes or some of each, is compounded with a shellac binder and the solvent used is alcohol. The chemistry of the inks must be carefully controlled so that the inks themselves do not have any deteriorating effects on the rubber plates used in the printing.

The speaker gave the characteristics or properties which are essential to the use of films or foils in package printing. Among

Harris 23 x 30″ single-color offset pres



Center Separation is ideal for fast-on, fast-off work small sheet sizes. On the 17½ x 22½″ and 23 x 30″ Harris resses, the 14″ setup shown here is used ordinarily for run-of- ne-hook jobs. In addition, these models let the pressman switch uickly to corner-comber separation for hard-to-run stocks.



Harris Corner Combers roll corners of sheet into arcs, thus breaking the pile edge seal. Between five and fifteen sheets are affected by the combing action, so that each sheet is actually separated from the one beneath it that many times before it becomes the top sheet, ready for feeding.

Halfway through the pile

and not a single trip-off

Take a look at a Harris feeder at work. Watch how cleanly it peels one sheet at a time off the top of the pile. Notice how each sheet is forwarded squarely to the feed table. Above all, look at the steady stream of sheets flowing through the press.

With the Harris feeder, the pressman can change quickly from one kind of stock to another. He has no fussy adjustments to make. And he can feed an unusually wide variety of stocks.

What makes the Harris feeder so versatile and so positive? One thing is the Harris automatic pile. Another is Harris stream feed. Still another is the Harris system of sheet separation.

Harris recognizes two basic methods for separating the sheets—center separation and corner-comber separation. Center separation is excellent for fast-on, fast-off work where the sheet size is small and the stock is not hard to handle. Corner combers are superior for larger sheet sizes, and for difficult stocks.

With these facts in mind, Harris engineers use center separation on presses up to 23 x 30″. In addition, the 17½ x 22½″ and 23 x 30″ models are also equipped with Harris corner combers for feeding difficult stocks. This combination lets the pressman select center separation, or corner combers, or both together, giving him the most versatile sheet separation in the business.

On presses over 23 x 30″, Harris uses corner-comber separation exclusively. Years of experience have proved that Harris corner separation with combers is the most positive system for separating larger sized sheets. What's more, it will handle a wider range of stock than any other method.

When you compare offset presses, be sure you have the full story on Harris feeders and the way they improve printing profits. Ask your Harris-Seybold representative, or write Harris-Seybold Company, 4510 East 71st Street, Cleveland 5, Ohio.

HARRIS-SEYBOLD COMPANY

fine graphic arts equipment . . . for everybody's profit

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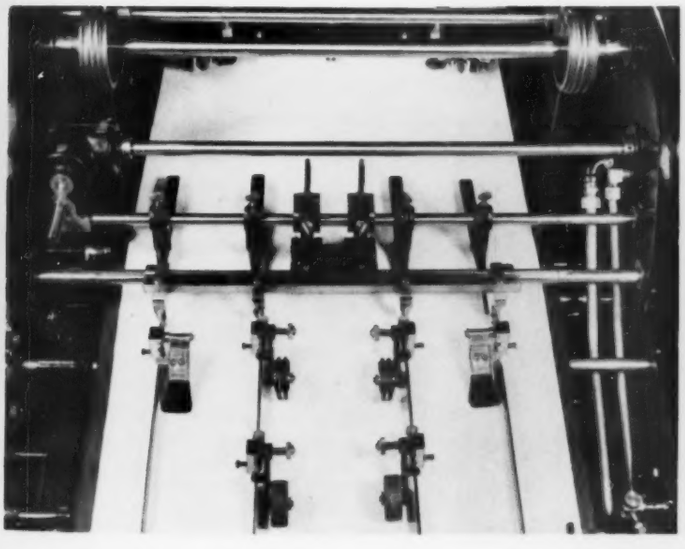


Harris Stream Feed controls the stock from feeder pile to registering mechanism. Since the underlapping sheets travel down the feed table at about one-fourth press speed, there's no nicking of gripper edge of sheet, no bouncing away from front guides, plenty of time for fine register on each and every sheet.

Harris builds a full line of offset presses

. . . all have versatile, positive Harris feeders

PRESS SIZE	NUMBER OF COLOR UNITS ①	②	④	⑤
14½ x 20½"*	●			
17½ x 22½"**	●			
23 x 30"**	●			
23 x 36"	●	●		
31 x 43"		●		
36 x 48"	●	●		
43 x 59"	●	●	●	●
51 x 73"	●	●	●	●
52½ x 77"	●	●	●	●

* 14½ x 20½" has center separation at front edge.

** 17½ x 22½" and 23 x 30" have both center separation and corner-comber separation.

these were: The inks must be applied to the film in such manner that they will be permanently bonded without offsetting. Offsetting is extremely important in dealing with transparent materials. The inks themselves must be opaque. The colors must be uniform, bright and strong to serve their purpose in carrying the design of the manufacturer who presents his product for sale.

Jones explained that the up-to-date flexographic printer re-introduces moisture during the flexographic printing process by passing the web through what might otherwise be called the normalizing chamber, in which the moisture is re-introduced.

The flexographic process is adapted to package printing for economy reasons. The molded rubber plates are not only relatively inexpensive but by their very nature can be rapidly changed or revised in part. Minor corrections in plates can be made easily.

Flexographic printing is not recommended where careful photographic reproduction and process printing is involved. The best reproduction of this type of work can be done by the rotogravure process. He referred specifically to certain small packages such as the Beech-Nut Chewing Gum package which are better left to the rotogravure printing which has the inherent ability to produce fine lines accurately and uniformly.

In general, he related, flexographic printing is an excellent process for aluminum foil just the same as it is for the various films. The physical situation is much the same. The ink is applied to the metal and stands right on the top—it is not absorbed at all.

Gravure Printing of Paper Wrappers and Labels

Delmore Moffett, superintendent of printing, The K.V.P. Company, Kalamazoo, Mich., discussed *Gravure Printing of Paper Wrappers and Labels*. In relating his company's experience with the gravure process, he stated: "We have found it is possible, though not always desirable, to produce wrappers or labels with less colors when printing gravure than it would be possible for us to use were we to print letterpress. This is primarily due to the difference in the method of ink application as we can run heavier solids and lighter tones on one gravure unit than can be successfully printed on one cylinder of a letterpress.

Moffett enumerated certain qualities in the stock for printing by gravure of box wrappers and labels which he considered mandatory. These are as follows: Smooth stock surface on which to print, absorbent surface to properly receive ink, uniform moisture content of the stock to enable maintaining good register, strength and uniform caliper across the entire web.

He said: "In gravure printing we have found that we cannot as successfully print on as wide a range of surfaces as is possible for us to do when printing letterpress. The absorbent surface previously referred to is a surface which is receptive to the ink and which will absorb the ink sufficiently to give a good bond yet not absorb it to the degree that the solvent becomes trapped in the stock and difficult to evaporate as it passes through the ovens." He continued: "Another important factor in favor of gravure printing of carton wraps and labels is that the customer can be furnished any repeat desired, as the circumference of the cylinder can be varied to give the desired repeat length. We also find a definite advantage due to the less drying time required between the printing operation and the subsequent operations in the manufacture of the carton wraps. We eliminate the offset problem when using the gravure method. There is also a saving in makeready time in getting the job on the press and in production."

Offset for Folding Paper Cartons and Labels

The last speaker at the Package Printing Clinic was Ernest C. Wells, sales manager, Lawson Lithographing and Folding Box Co., Ltd., Montreal, Canada. His subject was *Offset Process of Printing Folding Paper Cartons and Labels*. During the discussion, it was revealed that Wells' firm is using glossy inks in printing packaging material by offset. The speaker stated he was not going to be technical in his address but would discuss artistry, versatility, economy and quality in lithography as applied to packaged printing. A few of the advantages in printing by offset consist of unmottled solid areas, clear small type, tinctorial strength in ink with the use of deep etch plates. On label work his firm employs a soft backed paper and prints 133 line halftone screen. He asserted the platemaking operation in offset is much faster and there is less makeready than in the letterpress process.

BOOKS

Monotype Typesetting Machine Plate Book

CONSISTING of 112 pages, size 8½ in. by 11 in., Lanston Monotype Corp. has issued a parts book for users of that company's 1517 composition typecaster. The illustrations of the machine parts (all of 'em) are shown in exploded view form. Not only that, but each part illustrated carries a simple key number in straight numerical form. The exploded views are shown on a left hand page with the numerical designation, the symbol, and the written-out name of the part on a right hand page. In this way, a part is illustrated and identified without cluttering up the illustrated page with complicated symbols. All of the illustrations are shown in outline halftone to permit quick recognition of a part.

Some of the illustrations show individual parts which are supplied only in a complete assembly, because the precise fitting of the parts in the assembly requires special tools and fixtures which are not available outside the factory. However, the purpose in showing these parts individually is to provide instructional aid to apprentice casting machine operators in their studies.

An index by means of which any illustrative page for a major machine part can be located quickly is included on page 112.

The art work for the illustrated pages has been meticulously done. All illustrated parts and parts numbers and names have been isolated on two page spreads.

Copies of the 1517 Monotype Typesetting Machine book have been sent to users operating typesetting machines and type and rule casters. Additional copies are available at $1.50 each. Address Lanston Monotype Corp., direct, 4th at Locust, Philadelphia 3.

Pressroom Problem Solved by Diffuser — The Rand McNally Co., Skokie, Ill., printers of maps, guides and other multi-colored printed matter, installed a draftless diffuser manufactured by Pyle-National Co., Multi-Vent Division. The installation was necessitated by Rand McNally's use of photocomposing equipment which measures and places offset printing plates in exact position. Under conditions of high humidity, the positioning was found to be inaccurate due to paper expansion and contraction from one color press to the next. To counteract this condition, three lines of Multi-Vent ducts were installed over the aisles between the presses in the 160 ft. by 160 ft. pressroom. Ducts are fed from a main on one wall, and valve sections run along bottom of duct with an average of 65 valves used on each duct line. With this diffusion system, the 350,000 cu. ft. of air is changed 15 times every hour.

Techniques of Plant Maintenance

MAINTENANCE men in the Graphic Arts industry can get a glimpse of some of the latest, expert thinking on good maintenance practices by reading the book, *Techniques of Plant Maintenance and Engineering—1955*. The book, composed of papers and transcripts of discussions at the fifth annual Plant Maintenance and Engineering Show, has been published by Clapp & Poliak, Inc.

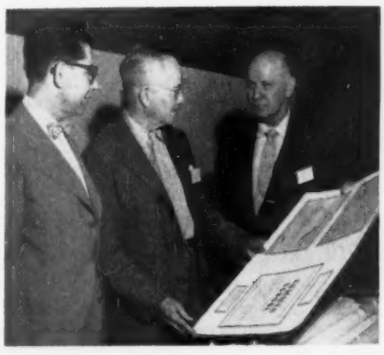
While maintenance of printing plants is not discussed specifically, a round table discussion on maintenance in paper mills and paper product plants is included. Many of the discussions and papers are general in content and would apply equally well to maintenance in any industry in the nation.

For example, in sectional reports subjects discussed include *Planning and*

Scheduling—A Key to Effective Control, Organization of the Maintenance Force, Maintenance Cost Control, Work Measurement and Work Standards, and *Training the Maintenance Force.* General session reports include those on planning and scheduling and managing the maintenance organization.

Of special interest to Graphic Arts maintenance men in firms planning new buildings or expansions is the talk, *Maintenance and Construction of Plant Buildings,* by W. E. Chandler, plant engineer, John F. Queeny Plant, Organic Chemicals Division, Monsanto Chemical Co., St. Louis, Mo. Chandler says that attaining the ideal situation where all buildings have been designed to accommodate current maintenance products and processes is basically one of long-range planning. "And," he continues, "the ability to make long-range plans is one of the characteristics that distinguishes the true maintenance engineer from the glorified mechanic." From that point he goes on to discuss the various features of a new building in the light of modern maintenance practices.

This is a 218-page, 8½ in. x 11 in., cloth-bound volume. It contains 61 charts and diagrams. The book can be obtained for $7.50 postpaid from Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

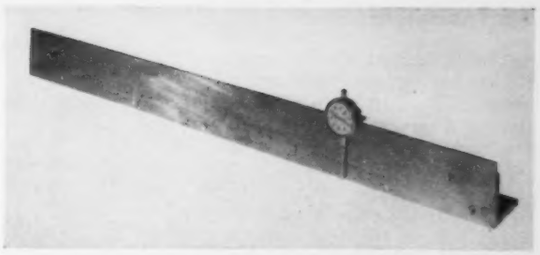


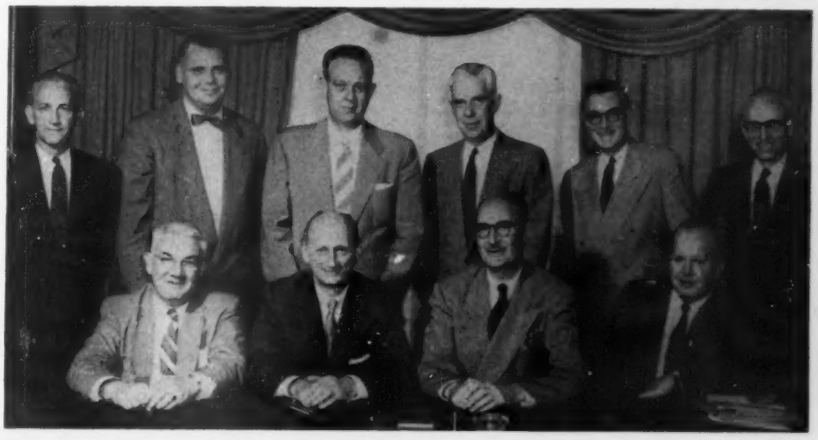
Graphic Arts Contest—The ninth annual Ford Industrial Arts Awards Competition held in Dearborn, Mich., was recently ended. Entries included printing in one, two and more colors in letterpress, offset and silk screen. Over 80 cash awards were made among the approximately 450 entries from junior, senior and vocational schools in all parts of the United States. Judging Graphic Arts entries in the contest are (left to right): Samuel M. Burt, managing director, Education Council of the Graphic Arts Industry; Harry Gage, Graphic Arts consultant; John T. Porter (chairman) education director, American Type Founders, Inc.

Pass it Along

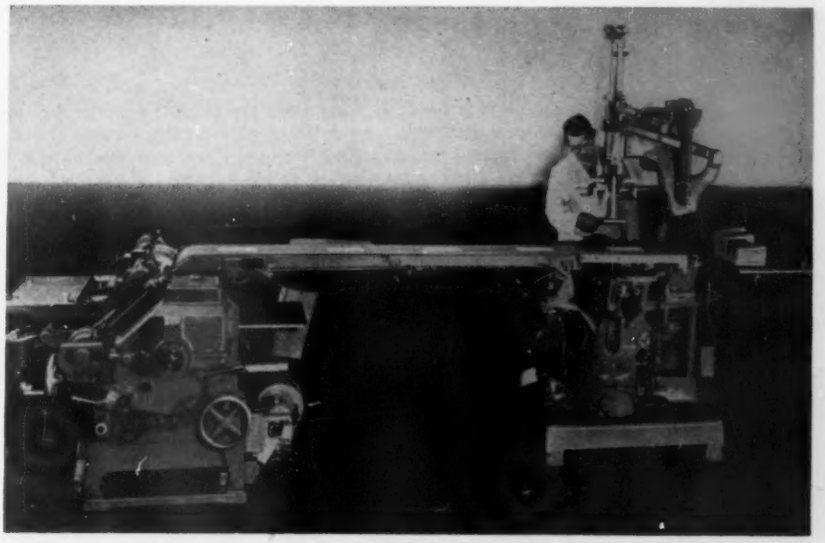
Many printing plant executives pass along copies of *Printing Equipment Engineer* regularly to interested employees in the plant. In this way, a more interested production organization will be maintained.

Plane Accuracy Gauge—A number of devices have been developed from time to time for gauging the plane accuracy of flat surfaces of considerable area. The latest to come to our attention has been devised by Graphic Arts Industry, Inc., Minneapolis, Minn., for use in plant engineering work. The gauge is useful in determining the accuracy of, for instance, a composing table top or a flatbed printing press bed surface. The straight edge is affixed to a length of angle iron. The straight edge itself is ground to an accuracy of 0.005 in. and the two edges are parallel within 0.005 in. A dial micrometer fitted with a special riding device is attached to the straight edge. A patent has been applied for by Graphic Arts Industry, Inc., according to Vice Pres. and Gen. Mgr. Paul J. Ocken.





Gravure Research, Inc. Officers Elected—At the annual meeting of Gravure Research, Inc., June 14, in Chicago, the organization's officers were elected as shown. From left to right are (seated): M. J. Waters, Art Gravure Corp., secretary-treasurer; O. Smiel, Intaglio Service, president; T. J. Stulz, Parade, retiring president and new member of the board of directors; J. P. Fisher, first vice president; (standing) A. Black, Crowell-Collier; J. Briggs, R. R. Donnelly Sons; R. Hazard, Detroit Gravure Corp.; George Martin, Standard Gravure Corp.; E. Worthington, George F. Motter's Sons; and C. Edson, Kable Brothers, all directors. Absent when the photo was taken was H. Molitor, Art Color Co., second vice president.



High Production Exports First Machine—A Diana Gluer and Diana Wrapper are the first machines to be completed and shipped from High Production Machine Co.'s new plant since it became a division of E. G. Staude Mfg. Co., Inc. and transferred operations to St. Paul, Minn., from Philadelphia. Key personnel and inventory were transferred to Staude's St. Paul plant where manufacture of High Production's set up carton folding and gluing machines has now been resumed. The Diana Gluer-Wrapper shown is one of a pair being shipped to High Production's British representative, Hunter-Penrose Ltd., London, for delivery to the British packaging industry.

An Invitation

The American Photoengravers Association has prepared an oversized invitation, 13½ in. by 17½ in., for its 59th Annual Convention to be held at the Waldorf Astoria Hotel in New York, N. Y., October 10 through 12. This four color, beautifully executed invitation (done in pastel color on grained surface stock) is to be followed by six follow-up folders, mailed at intervals of five or six days after the invitation.

Art director for the invitation was Louis Flader, consultant for the Association. The Statue of Liberty appearing on the invitation was by Wade Ray of Chicago and engraving by The Colorplate Engraving Co., New York, N. Y. The colorful drawing in the inside of the invitation called New York's Avenues of Fashions was by Jean Pages of New York. All plates are four color process, 100 line screen. The type faces are Centaur and Arrigh, inks are Dullset and paper is Strathmore Pastell Cover No. 65. The invitation contains a short explanation of the purpose of the convention and an extension of Pres. D. H. Murnik's personal invitation.

For the six folders, the art director was Robert W. Washbish, San Francisco; the artist, Amado Gonzales, San Francisco; line etchings engraved by Oakland National Engraving & Gravure Co., Oakland, Calif.; type faces, American and Bauer Bodoni; inks, Dullset; paper, Strathmore Pastell 80 lb.

Typography and printing for both the invitation and the followup folders is by letterpress by Taylor & Taylor of San Francisco.

Frank Schreiber, executive secretary of the Association, says about past convention pieces, "By the use of this material we have succeeded in achieving attendance at our conventions to a point unmatched by any comparable trade association."

. . . miniature of oversized photoengraved invitation for the American Photoengravers Association Convention, Oct. 10, 11 and 12.

Officers and executive committee of the Association are: D. H. Murnik; R. C. Walker, first vice-president; W. K. James, second vice president; C. G. Rohrich, secretary treasurer; E. Bartlett Brooks, Kenneth Cooley, Thomas L. Cooper; C. A. Mawicke, Charles A. Staley, Walter V. Stewart, C. E. Whitaker; Frank J. Schreiber and Louis Flader.

Radiant Heat and Air Discharge Drier

By CHARLES CARSWELL*

**Sales Engineer of Herbert Products, Inc.*

To meet the varied requirements for drying coatings of different compositions, and for drying flexographic printing on varied types of film and paper, a combination radiant heat and hot air discharge drier has been developed. In this drier, warm air is discharged at high velocity through directive nozzles so that it impinges on the coated or printed surface. This discharge of heated air is made inside an enclosure so shaped as to confine the air and develop dynamically higher velocity flow at the exhaust end of the enclosure. This air movement intensifies the effect secured by the impingement of the air against the surface for removal of solvents.

The sloping back of the enclosure is faced with a Corning Pyrex radiant glass heating panel. This panel directs uniformly from its entire surface, radiant heat of long wave length—from 3 to 16 microns. Radiation of this wave length is readily absorbed by practically all organic materials without regard to color. The result is ability of this drier to develop higher temperatures in the coated surface than the temperature of the discharged air, to volatilize solvents by the action of the radiant heat, and to insure removal of solvents by the air discharge. An exhaust connection at the end of the drier, beyond the radiant glass panel, provides for removal of solvent laden air.

The combination of radiant heat with air discharge in this drier provides flexibility by permitting choice, through the controls, of temperature and quantity of air, and of the intensity of radiant heat.

The air discharge has three functions:

(a) Removal of solvents. The impingement against the surface, plus the high velocity movement through the constricted section of the enclosure, removes the solvent laden skin layer of air, thus permitting rapid and effective evaporation to occur.

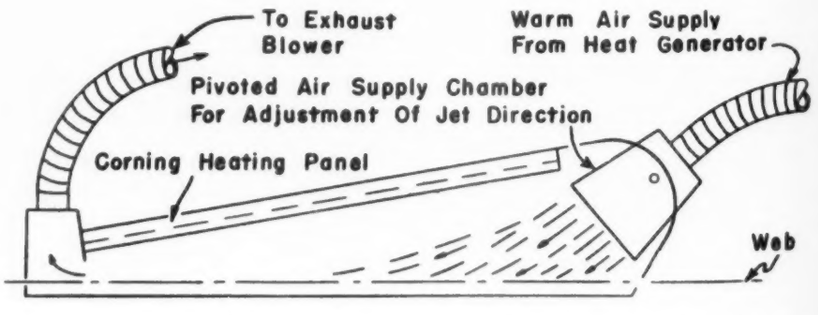
(b) Safe drying of films such as vinyls or polyethylene which become dimensionally unstable at high temperatures. For these critical films, air discharge can be maintained at suitably low temperature, and the radiant panels can be operated at low level or shut off entirely.

(c) Protection against overheating at press stoppages, without need of moving away the radiant heating panels. Heat can be shut off immediately in the air supply, and full volume of unheated air can be impinged on the coated or printed surface to provide a cooling stream of air to dissipate residual heat in the radiant glass panel and to prevent further heating of the film or paper during the stoppage.

The radiant heat provides capacity sufficient to permit high speeds on the machines. The surface is exposed to radiant energy of a wave length that is penetrating and of high efficiency, and this is done at the same time that the solvents are being removed by the air stream. The result is that the surface is able to absorb the radiant energy with the greatest effectiveness, convèrt it to heat in the coating or printing, and in the film, and thus vaporize solvent from bottom to top.

The number of radiant glass panels for any installation is determined to suit the speed desired. The discharge and radiant panel units are normally 2 ft. 9 in. in length, and of width to suit the application. An assembly of the number of units required is readily and economically made. The heat generating unit for the air supply is assembled as a single "package" with the blower and exhaust fans and motor drive, and connections to the discharge units are made by flexible tubes. Damper controls permit regulation of the air volume to each of the discharge units separately, or to the entire assembly by one control.

Safety in operation is provided by the drier. No fire hazard can exist because the surface temperature of the radiant glass panels does not exceed 660 deg. Thus if some misfeeding of the machine causes the film or paper to touch a radiant panel, the material will scorch but will not ignite.


To Exhaust Blower
Warm Air Supply From Heat Generator
Pivoted Air Supply Chamber For Adjustment Of Jet Direction
Corning Heating Panel
Web

Hoe Celebrates 150th Anniversary

R. Hoe & Co., Inc. is celebrating its 150th anniversary. The company has made many contributions to the refinement of the printing press as an agent of mass communications during the past century and a half. Output of the printing press 150 years ago was insignificant in comparison with today's rates of production. Several hundred sheets a day, printed on one side, was considered normal at that time. The first presses were turned out by Robert Hoe in 1845. Those early presses were all flat bed. They were fed one sheet at a time and printed on one side at a time.

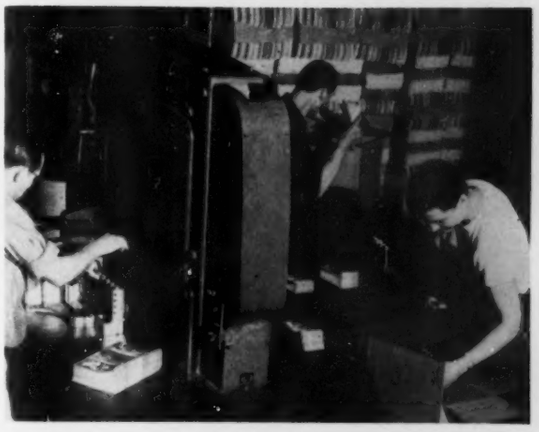
Hoe's newest newspaper press, the Color Convertible, prints at the rate of 14 eight page newspaper sections per sec., 50,000 copies per hr. It is a mechanism, weighing approx. 20 T. with a few more tons added for the foundation in which it is embedded. It is constructed of steel, iron, brass and copper. To move or install it represents a major job of heavy duty rigging. Many of these units are now in operation in pressrooms of the large metropolitan dailies, a number of which are equipped with facilities for full r.o.p. color. One of the short cuts introduced to reduce printing time is the Hoe paper feed. Before advent of the modern press, when the end of the roll of paper was reached, the press was stopped while a new paper roll was hoisted into position. Today the rolls of paper are changed automatically without slowing up of the printing speed which will run as high as 500 r.p.m.

In succeeding years other important devices and improvements have been added to the press. There was the first American rotogravure multicolor press which was another Hoe first. Today, with paper and printing ink representing the major costs in the publishing of a newspaper, many devices have been introduced to effect more economical consumption of both. But the cry from the publishers for more speed continues. What the future will produce is hard to guess.

Speaker's Aid

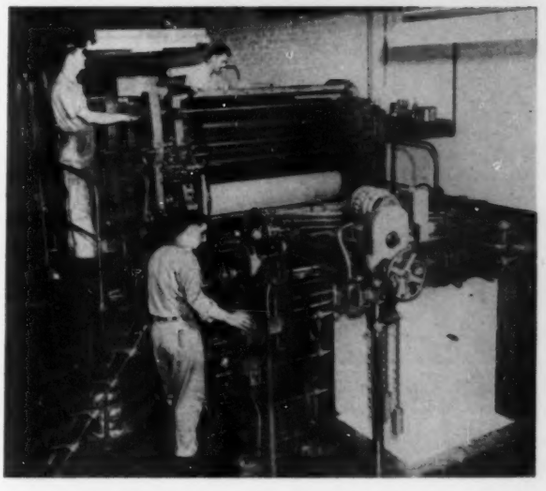
A Pocket Book of Speech Formulas, a new training aid for foremen and other supervisors, has been published by the National Safety Council. Written by Lester Lyle McCreary, professor of speech and English at California Institute of Technology, the 36 page manual presents ideas that will assist anyone called upon to give a talk. It shows how to practice a speech, how to use the best voice, how to hold audience interest and how to make the speech teach. The manual includes details of organization, preparation and delivery. It even shows how to win over a hostile audience. The *Pocket Book of Speech Formulas* is illustrated with line drawings. Book is available to Council members at 60c and to nonmembers at $1.20. For information write the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Truck Increases Production—Utilization of a battery driven hydraulically operated Powrworker pallet truck, manufactured by Clark Equipment Co., speeded up handling and reduced illness layoffs from physical strain at Gunthrop-Warren Printing Co., Chicago. Over 80,000 lbs. of stock daily is moved from receiving dock to storage, presses, shipping dock and then into trailers. Powrworker is transferred by elevator to handle stock on three floors of Gunthrop-Warren. Purchase of the truck did not require any changes in warehousing pattern or storage area layout.



Davy Crockett Trimmed at High Speeds—The current Davy Crockett craze is being accommodated at the Greater Buffalo Press, Inc., Buffalo, N. Y. Millions of comic books, at the rate of 150,000 per hr., are trimmed and cut apart by the illustrated Brackett safety trimmer, manufactured by the Dexter Folder Co. At this rate six men are required to remove and stack the 3 in. by 7½ in. Davy Crockett books. The comics are printed and pasted on press six up.

Side-by-Side—This dual Heidelberg installation resulted when Roy M. Limberg, proprietor of A.B.C. Printers, Los Angeles, installed two new units to replace one of older design.



Planeta Press Installed—A two color offset press on which it is said over 1600 standard two color letterheads a minute can be printed was recently added to the Nashville plant of Cullom & Ghertner Co., according to Pres. Alven S. Ghertner. This Planeta press was imported from Germany. Besides black and white printing jobs, such work as advertising materials, brochures, labels, and maps can be printed.

Car Fleet for Matrix Contrast Service—Delivery of a fleet of new service cars and trucks was recently made to Matrix Contrast Corp. These cars will work out of the Matrix branches from coast to coast, to service linecasting machine matrices of newspapers and other printing plants, and to apply the Matrix method of color contrasts to the matrices.

Color Register and Cutoff Control For Use on Rotary Printing Presses

TO help maintain accurate registration of the web or stock on the press during printing is the purpose of Champlain Co. Inc.'s Registron electronic control system. It also is intended to aid in holding register in such other in-line operations as rotary cutting and roll-fed die cutting.

Registron employs a photoelectric eye to achieve control. The system consists of a web scanner, photoelectric phase detector and control unit. These components function as a unified instrument group, continuously inspecting the moving web and the rotating printing cylinder. It anticipates off-register before the web reaches the cylinder, and almost instantaneously forestalls error by advancing or retarding the printing cylinder as required.

Performance Characteristics

The manufacturer claims these performance characteristics for the unit: No clear web track or printed register mark is required, thus saving edge and side trim that would otherwise be wasted. The Registron is independent of color variation. The phase detector, with its photo tubes, cannot wear out, it is asserted, and it does not depend on web speed for function. Advance phasing at standstill is possible, eliminating loss of mis-registered stock. The Registron is consistently accurate, it is claimed, since there is no hand adjustment of sensitivity controls.

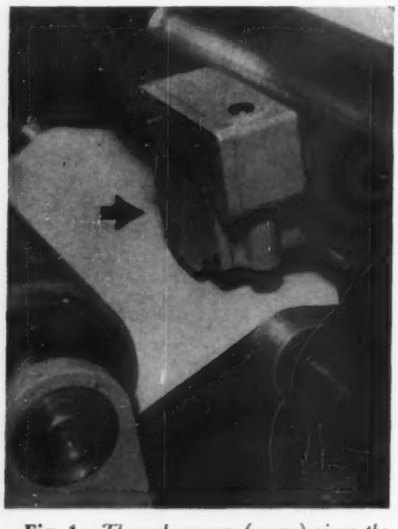


Fig. 1—*The web scanner (arrow) views the web at any point across the width of the web. Scanning the stock before it reaches the printing cylinder, it anticipates errors and signals for their correction.*

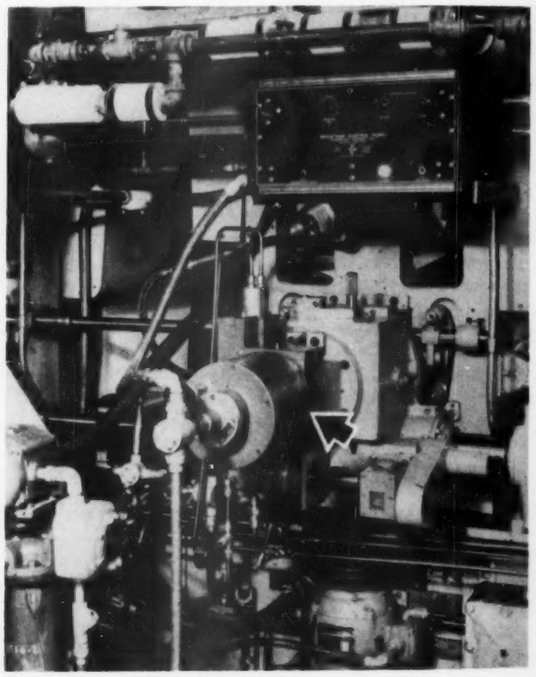


Fig. 2—*The phase detector (arrow) rotates synchronously with the printing cylinder. Function of the detector is to determine the precise angular position of the cylinder relative to the web or stock being printed. This information is relayed to the control unit. The control unit (top) initiates the advance or retreat necessary to maintain color register and cutoff. The control unit houses selective circuits and amplifiers, gating circuits and wave-shaping circuits.*

Two Models

Champlain builds the Registron in two models, 293A and 293B. The 293A does not need a master control panel and uses a single-speed electric motor for remote fine phasing. Model 293B approaches complete automation with remote control and a master control panel. It has a two-speed motor for remote coarse and fine phasing, as well as automatic fine phasing.

Scanning the Web

The cast-aluminum, explosion-proof web scanner (Fig. 1) is mounted between printing units in a position where it can be made to view the web at any point across the width of the web. In printing, it scans the stock in advance of the printing cylinder so errors can be anticipated.

Target of the web scanner is a register mark or solid color area, predetermined at the first color printing unit. As the target moves through the optical field of the scanner it sets off an electrical impulse. This is amplified and relayed to the control panel and thence to the electronic controls governing the correcting mechanism. Photo tubes, vacuum tubes, diodes and thyratrons are the links in this recognition and reaction function.

Phase Detector

The phase detector (Fig. 2) is mounted near the rotary cylinder shaft and is

coupled to it so both rotate synchronously. Function of the detector is to determine the precise angular position of the printing cylinder relative to the web and to relay this information to the control unit. In model 293A, the detector must be manually synchronized with the in-register position at the outset, but then it is electrically powered by a small synchronous motor for fine phasing during the press run. In model 293B, both coarse and fine phasing can be done by push-button from the master control board. In addition, there is automatic fine phasing, which reduces waste when setting up for a production run.

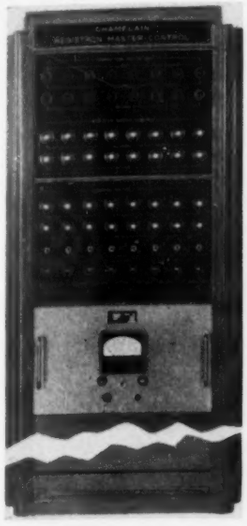


Fig. 3—*Master control panel for the model 293B Registron. With remote control and this master panel, virtually complete automation is achieved, says the manufacturer. There is a two-speed motor for remote phasing, both coarse and fine, and automatic fine phasing.*

The phase detector generates two square waves with a dead space between them, this entire operating space occurring within an inch in each revolution of the printing cylinder. One of these waves is called the lead gate, or wave ahead of the register mark, and the other wave is called the lag gate, or wave that follows it. When the web is being printed in perfect register, it is explained, the target or web mark falls exactly in the dead zone, which is usually adjusted to 0.005 in. in length. Any variation from dead center exceeding 0.0025 in., depending on press requirements, will produce a signal for appropriate correction, says the manufacturer. Once set, this tolerance will remain uniform at speeds ranging from a low idling speed of 50 ft. per minute to speeds as high as 1500 f.p.m.

Controlling the System

The control unit (top, Fig. 2) is the Registron's control center. When a correction is needed, this unit sets off the required advance or retarding action.

Automatic leveling in the web circuit eliminates the need for a manually operated sensitivity control, reducing the possibility of human error. A selector circuit provides either pulsing or continuous correction.

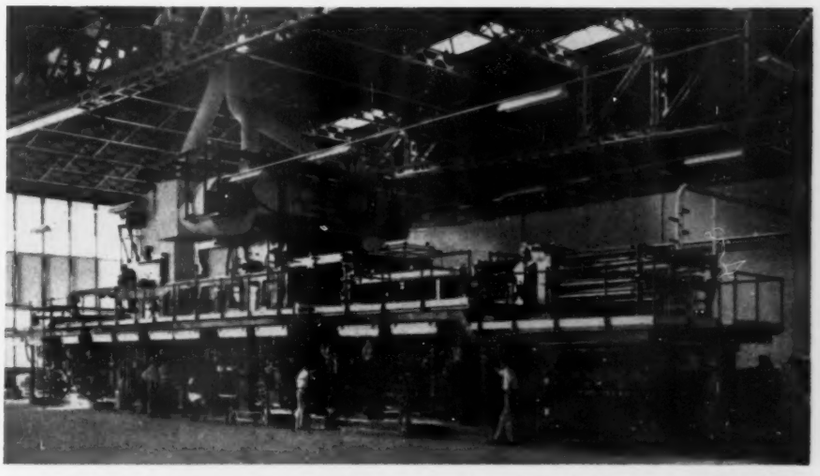
Another feature of the control unit permits standstill phasing for accurate registration while the press is stopped. In model 293B additional circuits provide for automatic fine phasing either at standstill or while the press is running. Also, a new type selenium rectifier, with a ten-fold boost, furnishes direct current for light source lamps.

Circuits in the control unit have been simplified, and only two controls appear on the face of the panel in model 293A. One is set for either pulsing or continuous correction. The other governs the length of time the register correcting motor will run for a pulsing correction. When a continuous correction is called for by the setting, the motor runs until the correction has been made. In model 293B there is no need for a control to select pulsing or continuous correction since switching from one to the other is automatic.

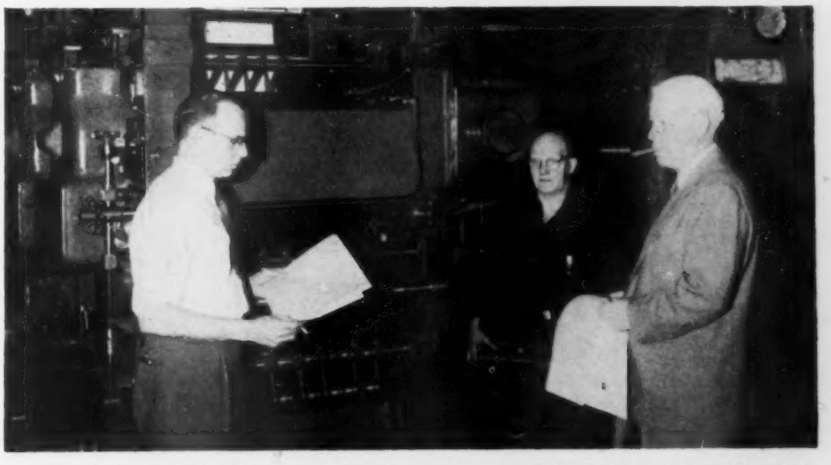
Oscars To Be Awarded

The first of a series of letterpress Oscars will be awarded at the 58th annual convention of the Intl. Assoc. of Electrotypers & Stereotypers, Inc., it was announced by Pres. Carl N. Becker. The convention will be held Oct. 19 through Oct. 22, at The Shoreham, Washington, D. C. More than 200 members are expected to attend. Pres. Becker has appointed a committee of five to select individuals for the association to honor at the convention for outstanding contributions to the letterpress printing industry. Award committee members are: Walter C. Dohm, New York; Elmer Schwartz and Clem Mawicke, Chicago; Walter C. Deye, Cincinnati; and C. H. McNellen.

Guest speakers, open forums and industry discussions are being programmed by Chairman Elmer Schwartz.



Installation in Japan—The Cottrell Co., Sub. of Harris-Seybold Co., recently installed a Double Five Color Magazine Press with Jaw Folder in Japan. This web press was built for Gakko Tosho Ltd. of Tokyo and will be used primarily to print Japanese school books. Levey Steam Drive Dryers and Cline three-arm reel and automatic paster are included in this installation.



One for Japan—Looking over a new Goss newspaper printing press to be shipped to Japan are A. J. Krohn (left) and C. S. Reilly (right). These men are vice president and president respectively of Goss Printing Press International S. A., erector firm for the Goss Printing Press Co. The press is a two-unit Headliner with tension plate lockup cylinders, two center color cylinders, a double angle bar arrangement and a double delivery Uniflow folder. Mainichi Newspapers, with Chikao Honda, president, and Tara Hirano, managing director, is the Japanese customer. Goss says this is the first newspaper press to be shipped to Japan since the war.

Personnel Relations at Brown & Bigelow

By E. C. DAY*

**Personnel Director, Brown & Bigelow, St. Paul, Minn. Abstracted from address delivered before Northwest Mechanical Conference, St. Paul, Minn., February 1955.*

REGARDLESS of the size of the concern, personnel functions and procedures must be adopted. In the smaller concern, these are usually handled in conjunction with other functions by the owner of the business, the purchasing agent, the accountant.

Being considered a fairly large company, we have a personnel function reporting to the head of the company. Our first responsibility is maintaining an adequate, accurate record of all employees. Good records are essential. With the multiplicity of government regulations, which must be very closely observed, to say nothing of the responsibility of insuring that all of the employees are paid at the proper rate for the exact number of hours each has worked, it makes such record keeping mandatory.

Employee Records

In our company we maintain individual file folders in each of which is filed all of the information regarding each employee. This folder contains, among other things, an employee's record card. This record card carries pertinent and personal information as well as a chronological history of the department, job classification, salary rates, beginning with the first date of employment up to the present time.

The folder also contains the employee's original application for employment, an age certificate as required by government regulation, ability progress reports, particularly in the case of an apprentice, as rated by our various department heads and any such other personal matters as may relate to the individual employee.

From these records, we must notify other departments such as payroll, medical insurance, tax department supervisors and at times, even the unions, of changes in the status of the employee with respect to withholding tax, wage adjustment, marital status, address and telephone changes and insurance beneficiaries.

Our staff prides itself upon the promptness with which it handles this function. With the many unions with whom we have bargaining agreements we issue a revised seniority list for each department monthly in order to insure adherence to seniority provisions when layoffs and reemployment become necessary. These seniority lists are prepared in our tabulating department which insures their correctness.

Medical Department

We maintain a medical department in both the St. Paul and Minneapolis plants. They are completely staffed with registered nurses who operate on all three shifts. This department is designed primarily for the welfare of our employees. Each plant has hospital beds and complete facilities necessary for first aid in any type of accident or illness. In 1954 our nursing staff in both plants took care of over 17 thousand visits. Now please don't get the idea that we have over 17 thousand accidents. By far the majority of these visits were for headaches, colds, sore throats, etc. I have even heard rumors that Bromo Seltzer, Aspirin, and Pepto Bismol have been dispensed.

This department reports to a medical director who is always available. He is a first class physician. He takes care of any injuries which occur that are beyond the ability of our first aid nursing staff. All of our employees are required to take a pre-employment physical examination before they are placed on the job. This department works closely with our employment office as well as our safety department, which, by the way, has a very outstanding record.

In 1954, with over 9 million man hours worked, we had only 33 lost time accidents, totaling less than 900 days. Our safety program is in charge of our director of safety and is administered by committees which are composed of responsible representatives from each department. These committees meet monthly with the safety director to review the causes of such accidents as have occurred and devise ways and means of preventng further occurrences. A constant check is made throughout the entire company in search of safety hazards and methods of correction.

Employment offices are maintained in both our Minneapolis and St. Paul plants. I think this is an important matter. We have a rigid policy that every applicant for employment must be given the courtesy of a helpful, understanding interview. The applications of qualified applicants, for whom we have no immediate openings, are retained for future job opportunities. During the past year in both plants approx. 2 thousand applicants were interviewed.

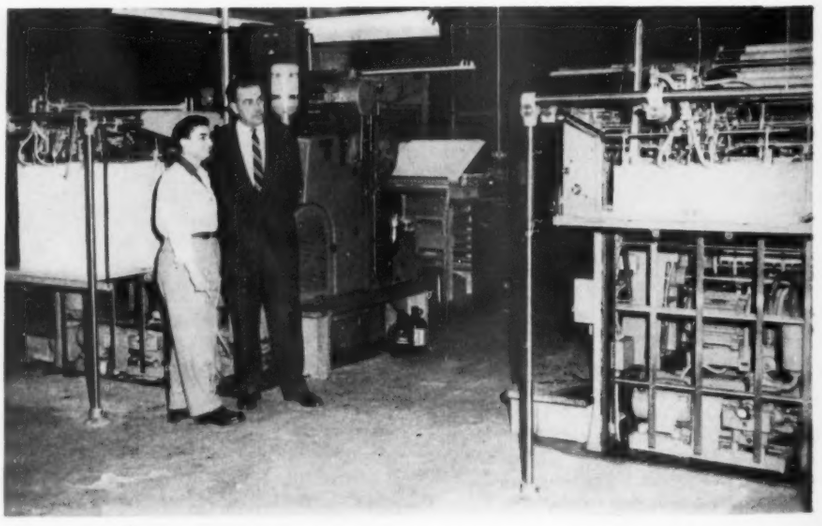
In many instances, when we are unable to place these applicants, we have been successful in assisting them to find work in other plants. Naturally, however, skilled craftsmen, because of our union shop job status, are largely secured through the offices of unions with whom we have bargaining agreements. In the case of skilled craftsmen, as well as most office occupations, the employment department screens them and then refers such applicants to the department heads, who make the final selections.

Testing Applicants

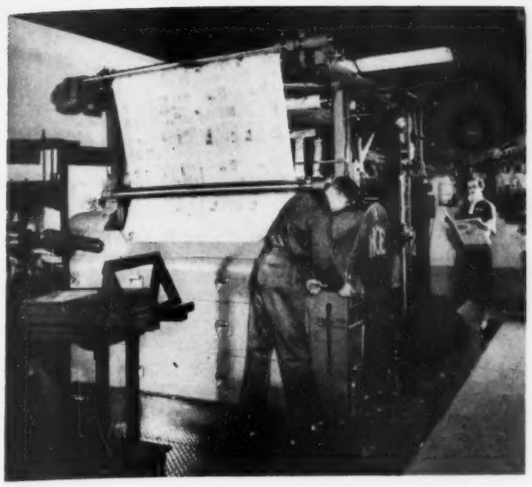
Most of you have heard of techniques with respect to testing applicants for the various types of jobs. We do testing only for certain occupations, such as speed testing for typing and shorthand, various calculating machines, etc. In the main we rely on the good judgment of our interviewers.

Supervisory Training

We have now had over a year's experience in supervisory training. I dislike the word "training" because it always brings to my mind a picture of a teacher standing at a blackboard. Our program is called the supervisors' conference program. Currently, we have 60 supervisors participating in five separate conference groups. The subjects discussed are usually



Pairing of Miehle Presses—Kane Lithographers, Inc., New York, N. Y., recently completed the installation of two Miehle No. 29 Offset presses. Pictured watching the new presses in operation are (left) Leon Kane, secretary-treasurer of the firm and Bert Steiner, Miehle Printing Press and Mfg. Co. representative. Kane emphasized that pairing equipment made for higher production and better plant operation.



Printing Strides Ahead—Three centuries of progress in printing is contrasted here. The modern Hoe Color Convertible press unit, capable of printing 60,000 newspapers an hour, is a far cry from one of the earliest wooden frame hand presses which turned out only a few hundred sheets a day such as used by Benjamin Franklin. The multiple-cylinder press, developed by R. Hoe & Co., Inc., weighs approx. 20 T. and turns out 17 complete newspapers every second. Standing beside the press are Dorothy Kroeber, reading the paper, and Pressman Diedrich Von Spreckelsen.

those selected by the various groups in fields in which they are having or have had difficulty in solving the problems. Our conference leader acts as a coordinator for the various groups, doing the necessary research work to help them in arriving at the proper solution of the problem as well as keeping the discussion on the track. Without exception, every supervisor who has participated in this program has enthusiastically agreed that it has been very helpful to him in his capacity as a supervisor and has recommended that the program be expanded to include all levels of supervision.

Employee Induction

This year we are planning on installing an induction program for new employees. The program will include a description of the company's operations and its products; an explanation of the company's policies and what we expect from the employee; a complete explanation of the job to which the new employee will be assigned; a review of our safety rules, insurance program and such other information as may seem advisable after we get into the program. We anticipate this will require approx. 2 hrs. Of course, the on-the-job training will be continued at the work place.

Our personnel activities also provide for an employee benefits program. This function includes our insurance program which covers hospitalization and surgical fee schedule for our employee's and their dependents for which the employer pays the entire cost; sickness and accident insurance, providing one-half pay up to a maximum of $75 per week in the event of accident or sickness, which is also paid for by the company, and a very fine life insurance program.

Life Insurance

Our group insurance policy provides that each employee is permitted to carry a policy equivalent to his or her annual salary up to a maximum of $6 thousand. In the event of death, the beneficiary receives an immediate $1 thousand cash payment and 12 monthly installments of approx. the monthly income of the deceased employee. In connection with this life insurance policy, we make every effort to see that the initial payment is paid at once, many times even the same day one of our employees passes away.

Recreation Program

Under the direction of our employee benefits program also falls our recreation program. We sponsor softball, golf, bowling, choral groups and we have even had two or three big-scale picnics which over 14 thousand of our employees and their families attended. At the present time there are four bowling leagues in action with a total of 32 teams participating. We plan on having two men's house softball leagues this coming summer, one for day workers, and one for the night employees. The season ends with a championship match between the day side champions and the night side champions. Along with this, both men's and women's teams will be sponsored in our city commercial leagues.

Labor Relations

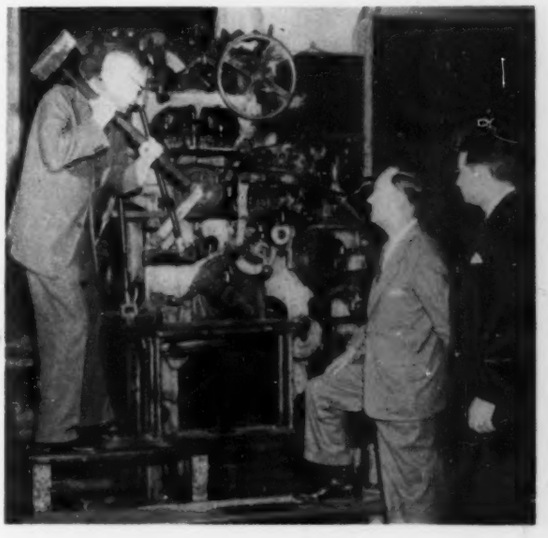
Now, last, but not least, is the labor relations function. In our company we consider our foremen the most important link in this phase of personnel procedures. When contract negotiations have been completed, one of our first acts is to sit down with the supervisors responsible for administering these new agreements. Each provision is gone over in detail to insure that all of us have a complete understanding of our obligations in living up to the terms of these agreements.

We hope our supervisors are all aware of their responsibility to know their contracts; know their rights under them; respect the rights of the employees and above all, to be fair, to be understanding, to be human and maintain the dignity of their job as supervisors.

There are many other functions and details that must be taken care of—flowers for the sick, and for funerals, ironing out complaints, counseling those in trouble, settling grievances and in general attempting to keep our employees as happy and contented on the job as is possible. In all of these many functions, our policy, as directed by our president, Mr. Ward, is to keep smiling and above all, have an understanding heart.

Increases Worker Safety

As a means of reducing industrial accidents, Master Lock Co. urges maintenance men to padlock control switchboxes when they are repairing industrial equipment. The company recommends that each man carry a padlock which only he can open. The device shown permits up to six men to lock out the same switchbox, making it impossible for power to be turned on until all have finished. This practice is endorsed by the National Safety Council to prevent accidents.



Clearing the Way—Edward Stern & Co., Inc. in Philadelphia, Pa., recently joined with the Miehle Printing Press & Mfg. Co. in the scrapping of an old Model No. 54 Single Color Offset Press. A new Miehle No. 76 Four Color Offset Printing Press is being added to Stern's long line of presses. Maurice Segal, president of Edward Stern & Co., Inc. is shown striking the first blow in the scrapping procedure. Watching is Charles Mills, Philadelphia manager for Miehle (center) and William J. Stevens, Eastern District offset sales manager.

AUTOMATION: *Pros and Cons*

AUTOMATIC printing plant equipment will exist side-by-side with non-automated printing plants in the years to come. And there are some printing plant operations which it will never be economical to automate. Thus it will be up to each printing plant executive individually to examine objectively the automated machinery suitable for his particular operation. Only after such deliberation should he decide whether it is practical or not to install such machinery.

As can be seen below, automation in general has disadvantages as well as advantages. The following list is from a prepared paper, *Introduction to Automation*, read by Richmond Maury, president, William Byrd Press, Inc., at the 5th Annual Meeting of the Research & Engineering Council in Boston, May 13.

Advantages

1. *Better quality.* Some processes machines can perform more skillfully than the most skilled worker. Machines cut the chance of human error.

2. *Quantity production.* When tremendous volumes of a particular product are needed, automated machines for production, assembly, unloading, and distribution far outstrip the work of humans.

3. *Lower production costs.* It used to take two men 17 hours to carburize 250 camshafts in the Chevrolet plant. Automatic electrical equipment for this work was installed and now one man can turn out 250 camshafts in one hour. In another case, nine machines costing $120 thousand are machining and assembling rifle grenades at the rate of 900 an hour. Previously the same job had required 27 machines costing $300 thousand and took up 200% more floor space.

4. *Creates demand.* Better quality at greater productivity and cheaper costs enables more people to buy, thus creating demand not otherwise there.

Disadvantages

1. *High initial cost.* One designer for a large engineering firm in Detroit has said that a completely automatic operation for the assembly of automobiles could be devised but that it won't be because it would be too expensive. So, there is a point beyond which it does not pay to automate.

2. *Danger of rapid obsolescence.* A company building a newly automated plant is in danger that better equipment may be available to competition even before its new plant is completed.

3. *Inflexibility of product.* The more automated a production line becomes, the more it is bound to produce a standardized product. A small change in product could require junking many expensive tools.

4. *Danger of flexible market.* Automation-produced items must have a mass market and they must be produced at fairly constant rates. If they are not, automation would be too expensive.

5. *Maintenance costs high.* More maintenance and more precise maintenance is required for automated equipment. Where formerly a maintenance man needed only an oil can or a wrench, he is now required to have technical knowledge. One example of why that is so: At the army's highly automated ordnance plant at Rockford, Ill., a single "robot" contains 57 miles of wire and 3000 electrical connections.

6. *Difficulty of control.* The man running the plant loses touch with the machine when it is highly automatic and remote from him. The control rooms are becoming more and more complicated, and if something goes wrong the engineer has to be able to spot the trouble quickly in a maze of wires, dials, and measuring devices.

Varnishing Cartons on a Duplex Press

By **CHARLES H. VILAS,** *Pope & Gray, Inc., and*

JACK POLAYES, *The Bar-Plate Mfg. Co., Inc.*

WITH more and more folding carton plants using the Bar-Plate for converting the second unit of a two-color press to cutting and creasing, it is logical to ask: "Why not have a varnish-cut operation as well as a print-cut operation?"

The answer is that it is being done in many plants throughout the country with Hi-Gloss Duplex Overprint Varnishes. The problem has been to make varnish which will have sufficient press stability to prevent gathering tack when in contact with the corks or rubbers of the cutting and creasing die, and, at the same time, dry fast enough to be able to maintain a high gloss with control of offset and sticking.

The conventional overprint varnishes when run on a print-cut or duplex press soon develop so much tack on the corks that the sheets cannot be delivered. The solution would be a varnish that dried instantly before contacting the die. Unfortunately, with the distribution systems on the presses available, we must stick to the oleoresinous type material that takes time to dry. For this reason a manufacturer made a move in the opposite direction. Hi-Gloss Duplex Overprint Varnishes have been slowed down sufficiently to permit the press to run idle for half an hour with no appreciable increase in tack. This eliminates the tendency to pull scrap on the die. Yet, within two hours' time, this varnish is dry enough on the sheet to permit stripping.

Varnish with these characteristics, however, is only the beginning of a successful varnish-cut operation. The corks or rubbers should be laminated with coarse emery paper or a sheet of Sherekote tympan paper before being cut up and glued to the die. This is already common practice for print-cut operations with ink. A small amount of paper dust may adhere to the carton at the point of contact with the corks. But since all loose dust adheres to each individual sheet at each impression, there is no large accumulation.

Loads are being run from 1200 to 1500 sheets high. Anti-offset spray is recommended. Obviously, these loads cannot be winded since they are already cut. If the loads are allowed to stand until completely dry, sticking trouble may be encountered. There is a crucial point of tackiness just before the varnish sets when the loads should be stripped. The strippers then fan the packs of cartons as they load them on the skids. In effect, the loads are winded as they are stripped.

Because of the remarkable stability of the Hi-Gloss Duplex Overprint Varnishes, the strippers have a fairly wide margin of time when any one load may be stripped. This still could be a confining factor, however, in the scheduling of work in some plants. There is a possibility that the cartons may stick together between the stripping and gluing operation. The cartons, therefore, should be fanned once more before stacking them on the gluer. It can be seen readily that in a successful varnish-cut operation careful coordination of printing, cutting, stripping and gluing is required.

What is the quality of this work in comparison with conventional varnishing? Aside from the presence of minute particles of paper dust where the corks contact the wet varnish, there is no way to detect a varnish-cut carton. On some stocks where the slower drying varnish sinks in with subsequent loss of gloss, the addition of a small amount of conventional Hi-Gloss Overprint Varnish will improve the finish.

What type of jobs lend themselves to the varnish-cut operation? Principally, the larger sized cartons using a low density die with a minimum of corking. Extremely small cartons are not ordinarily run by this method.

What type of plants find this operation feasible? Among the larger plants, those which already have a two color press converted for duplexing are responsive to the idea. They apply their print-cut experi-

ence to the Hi-Gloss Duplex Overprint Varnishes. The smaller plants which employ the Bar-Plate jacket are agreeable to trying the varnish-cut operation on their two color presses. Economy of operation may not be the only motive. Frequently, a small plant cannot afford to tie up its equipment on large runs. By usual methods, a two-color and varnish job would tie up one two-color press, one single and one cutter and creaser. By the varnish-cut method, only the two color press would be out of circulation.

To sum up, the varnish-cut operation is being practiced every day. It has its limitations, which, when understood, are no obstacle to the plant willing to make an extra effort in coordination.

Model for Benny—Many printers know of the cash prizes and coveted Benjamin Franklin statuettes awarded in Printing Industry of America's self-advertising contest for printers. Few, however, realize the difficulties encountered by W. T. Clawson, Miller Printing Machinery Co., in finding a suitable model for the Benny awards. End of a nationwide search was the Franklin-iana collection of the late Arthur Block, sr., f. mer director of the Poor Richard Club of Philadelphia. Then came the problem of finding a firm to reproduce the statuette. Further leg work turned up the Roman Bronze Co., which reproduced the pewter original in fine detail. Result of all this painstaking care: The PIA Benny statuettes are excellent pieces of art and workmanship in themselves.

BENNY

Battery Power for Web Tension Control

(Courtesy of *Storage Battery Power*, published by Edison Storage Battery Div. of Thomas A. Edison, Inc.)

WHAT is believed to be the first storage-battery application of its kind has been developed by Earl R. Weiskittel, pressroom superintendent of the Youngstown (O.) *Vindicator*, as a means of supplying power for controlling paper web tension on a newspaper press. First put into operation in 1950, battery power has since proved to be successful in eliminating loss of tension control and resulting press downtime formerly occasioned by fluctuation and outages in line power.

The *Vindicator's* press is designed to print 240,000 24-page papers or 120,000 48-page papers per hr. Control of the tension of the paper is a critical operation. A braking action must be applied to each roll which will prevent slack yet not tear the paper. This action must be varied to compensate for the gradually smaller diameter of the roll and for variations in the press speed, especially starts and stops.

On the *Vindicator* press, this is accomplished automatically by an electrical system of control which operates by means of flexible friction straps which are held against the outside of each roll of paper. At one end, the straps are anchored to the pressroom floor while, at the upper end, they are attached to drums on a shaft which is geared to a 40 v., d.c., torque motor, so called because its torque, acting through the drums, exerts a pull on the friction straps. A rheostat, actuated by a counter-weighted roller resting on the paper as it is fed into the press, controls the current to the motor.

The current to each motor averages approx. 4 amps. during normal running but rises to around 6 amps. in case of slow down or stopping of the press when more friction is needed to overcome the momentum of the roll and prevent over running.

Friction Varied for Safe Operation

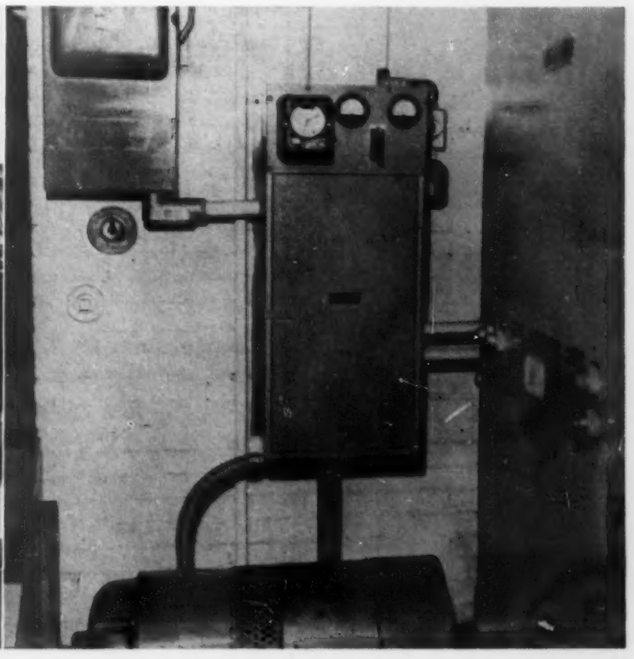
In this manner, the system accurately varies the friction to compensate for variable conditions of operation and maintain the tension of the paper within safe limits. Experience has shown, however, that it must be provided with a continuous and steady supply of d.c. power. Therein lies the reason for the use of a storage battery.

Formerly, the power was supplied by a motor generator but, in case of sudden fluctuations in the line power, the tension tended to vary and, in extreme cases, resulted in tearing or over running. The most serious difficulties arose from temporary power outages when tension control was lost completely and so much paper would unroll on the floor that an hour or more would be required before it could be re-threaded and press operation resumed. All of these difficulties have been eliminated.

Stable Voltage Needed

Since experience had shown that continuously stable voltage was the prime

Here is shown the 38-cell Edison Nickel-Iron-Alkaline storage battery which supplies unfailing power, regardless of fluctuations or outages of line power, to the torque motors which control the tension of the paper webs being fed into the press. This installation is at the Youngstown (O.) *Vindicator*.



The motor-generator equipped with ampere-hour-meter control at the Youngstown (O.) *Vindicator* which automatically returns the battery to a charged condition when the press is not running.

requirement of the tension control power supply, a conventional generator battery system, with the battery acting as standby, was not adopted in order to avoid the temporary fluctuation which occurs during switchover between generator and battery.

Instead, it was decided to apply the battery as the sole source of power while the press is operating and to recharge it during nonoperating intervals. Analysis showed that on most week days the load usually consists of 6 to 12 torque motors operating for periods of 8 hrs., and amounting to a consumption of 192 to 384 amp. hrs., followed by nonoperating periods of 16 hrs. when the battery can be charged.

During Saturdays and Sundays a somewhat more severe condition exists in that a consumption of 368 amp. hrs. is followed by a period of only 4 hrs. for battery charging. The necessity for rapid charging under such conditions as well as overall dependability of operation were among the considerations dictating the use of a 38-cell A14H Edison Nickel-Iron-Alkaline Storage Battery.

Charging is automatic. An ampere-hour meter measures output and controls input. It also shuts down the charger when the press is running and starts it when the press is shut down keeping it in operation until the battery is returned to a charged condition.

Personal Safety Promoted by Code

THE protection of personnel and the increased efficiency in operation of printing presses is the purpose of the first national safety code, developed by the American Standard Assoc., and especially designed for Graphic Arts equipment. The code is for publication presses such as are used for newspapers, magazines, rotogravure, large catalog work, etc.; and for commercial presses, either sheet fed or web fed.

The American Standards Assoc. recommends the voluntary adoption of the code by printing companies, either when new equipment is purchased or when any major change or alteration in existing equipment is made.

"If this code is used throughout the printing industry as each plant renews its equipment," stated Admiral Hussey, managing director of American Standards Assoc., "confusion in the use of controls will be prevented, thereby eliminating a source of serious injuries and increasing efficiency in operation. It will provide uniformity throughout the industry so that on change of employment, workers will be familiar with control operations in their new jobs."

Push button stations for the presses are required by the code to be arranged in a single vertical row, except on a commercial press where this arrangement might be impractical for convenient mounting, then the arrangement may be horizontal.

Control stations for publication presses will be provided with push buttons distinguished by designations and colors as shown in the accompanying chart. Certain designations formerly used on push buttons which looked similar to other words were eliminated by the committee who developed the standard. In each case, the push button is marked with the term which best described its function.

The code specifies requirements for safelights and warning signals. Control circuit arrangements are to be made to insure signals being operated prior to any movement of the press. Diagramic arrangement of suggested control circuits is given in the code, along with an explanation of new terms used.

A compilation of accident reports several years ago indicated the need for a nationally uniform code for controls and signaling devices for presses. The Printing and Publishing Section of the National Safety Council in 1951 asked the American Standards Assoc. to establish a committee to work on a solution to the problem. Administrative leadership for the project was furnished by the Research and Engineering Council of the Graphic Arts Industry and the National Safety Council. The committee who developed B65.1 represents a wide cross section of interest in the project.

ASA Push Button Designations for Control Stations on Publication Presses

Green	A maintained contact button marked *Safe*. When depressed it prevents the press from being started, or when the press is moving, prevents further increase in speed.
Black	A maintained contact push button marked *Ready*. Depressed, it establishes permissive circuits enabling the press to be started.
Yellow	A momentary contact button marked *Faster*. Starts the press and increases the speed as long as the button is held depressed.
Black	A momentary contact button marked *Slower*. Decreases the speed, eventually arriving at threading speed.
Light Grey or Aluminum	A momentary contact button marked *Inch*. Allows movement at threading speed.
Red	A momentary contact button marked *Stop*. The stop button only shall be a long push button.

Control stations for commercial presses have a stop button and may have buttons for *Inch, Run* (black), *Slow-Fast* (black), and *Reverse* (yellow).

Mechanized Handling Increases Production

Stocking irregular material such as rolls of paper weighing up to 2300 lbs., flat stock, binder boards and ink, plus handling waste paper in ton loads, a publishing house was faced with the problem of sufficient storage area.

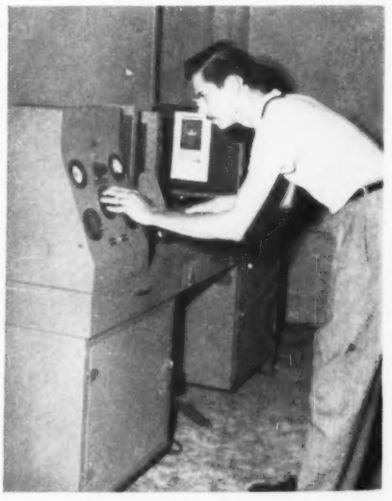
Materials handling methods were inefficient because all work was done manually. Paper damage was high. In addition, there was a continual danger to employees because of hazardous and laborious lifting operations.

Through the use of two Elwell-Parker electric industrial trucks the company has realized a 25% increase in production plus an increase of available storage space of 50%. The new mechanized handling freed three men for more productive jobs. Use of the trucks facilitates stacking and moving in the narrow aisles.

For further details, please mention PEE No. 516 in your request.

Color Separations

Forty-eight hour service for full color separations is being done for the trade by Color Litho, Inc., 6508 Euclid Ave., Cleveland 3, Ohio. Through photolithography, developed at Eastman Kodak,



craftsmen achieve the effect of four color process with three colors; magenta, yellow and cyan. The work is done through controlled photomechanical processes from color transparencies from 35 mm and up. The separations are supplied in either negative or positive halftone form.

Short Cuts in Offset Platemaking

(*Abstracted from* How To Make and Run Better Zinc Surface Plates, *Bulletin No. 805, Lithographic Technical Foundation.*)

IN recent years, the technical advancements in lithographic printing have been almost revolutionary. With LTF'S platemaking developments—surface treatments, cellulose gum etch, the sensitivity guide, non-blinding lacquer, and improved application techniques—you can now make and use surface plates for fine quality printing.

Now, in some plants, the runs are not too long and a lot of plates have to be made. The platemaker is asked to take short cuts—to reduce his platemaking time. In the tangle of the new and the old methods and materials—the claims and counter-claims that often conflict—the platemaker has a tough job when he tries to short cut. When he does it, he frequently carries out an operation that is not particularly important, and omits a step that is vital. The discussion in this article is an attempt to help him and to keep him from short cutting the wrong step.

LTF Recommendations

The Lithographic Technical Foundation has always confined its platemaking recommendations to ways of making the best possible plate. There are three main reasons for this. The first is that nobody can guarantee that a plate made one way will run for 5000 impressions and that if you do something else to it, it will run 50,000. The life of a plate depends too much on how it is handled on the press, the skill and knowledge of the pressman, and the condition of the press itself.

Secondly, it's very difficult for anyone to rate the importance of the different steps in platemaking. It's hard because they all tie in together and affect each other. For instance, you'll find a platemaker who swears by pre-etching—says he can't make a decent albumin plate without pre-etching. Now, this *could* be true. But, if you question him further, you'll probably find that he also does things that make his plates hard to develop like using a coating thickness that is always a little too thin. Even though pre-etching usually doesn't offer much if the plate is made incorrectly, it compensates for the platemaker's other errors in this case. So, in any evaluation of platemaking steps, we have to assume that each step is done correctly.

The last reason is the most important. Briefly, it is simply that the platemaker's job is to make plates that print with the least trouble. Whenever he short-cuts, he gambles on how well the plate will print.

The gamble may look attractive because of the number of times that he can get away with it. Over a period of time, however, short-cuts in platemaking usually cost a lot more than they save. It only takes a couple of makeovers or a few hours of slow running trying to coax a touchy plate to lose all the "savings" from many, many other short-cut plates.

LTF's work has shown that with a few more minutes in platemaking, you can always make plates that are consistently good. And, since these few extra minutes can save expensive hours in the pressroom, we believe that short cutting in platemaking is false economy. We urge you to avoid it whenever you can.

With these facts in mind then, LTF offers the following information only as a guide when it is absolutely essential that you cut your time on a particular job.

Evaluation of Platemaking Steps

All the steps required to produce the best possible surface plates are listed below in two columns. The column on the left shows them in the order that you would follow in making the plate. The column on the right lists these same steps in the order of their importance.

If it is *essential* that you skip any step, omit them, starting from the bottom of the right-hand column. Only under very rare conditions is it ever OK to omit any step that is part of the basic plate. *Under no condition should you ever omit the post-treatment!* It takes only 2 min., yet it corrects for residual coating—the basic fault that has given surface plates a black eye for many years.

Sometimes, if the run is very short (300 or 400 sheets, for example), you can gum the plates after the post-treatment and omit the etch. If the plate is to go to press immediately, warm it in the whirler, under a heat lamp, or before an arc lamp for a few minutes first.

If you are testing new procedures in making plates, LTF suggests that you add steps in the order in which they are listed in the right hand column. Don't try more than one new thing at a time.

Once you get a new step into satisfactory operation and know what it will do and won't do, then try the next new addition. If you start more than one new step and run into some kind of trouble, it's very hard to know what caused it. If this happens, a natural tendency is to throw out everything new and you stay in the same old rut. So, make haste slowly. Don't try to do everything at once. Never omit any step listed as part of the basic plate except as noted above.

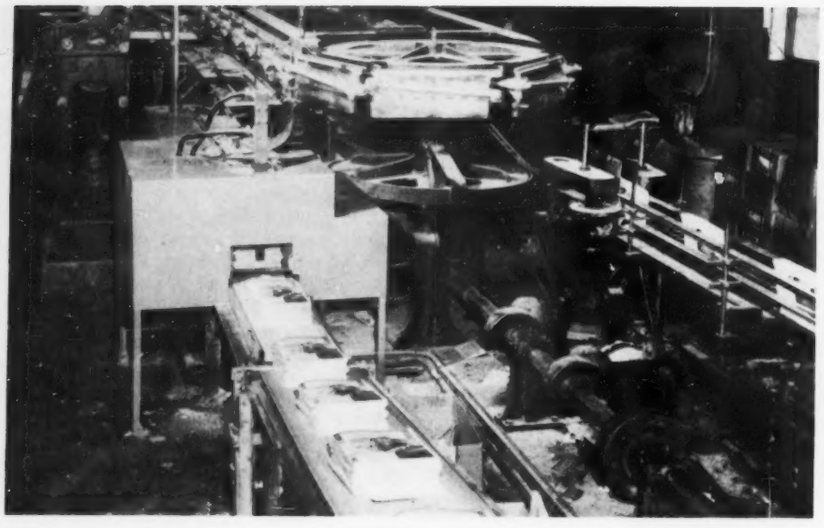
EVALUATION OF STEPS—SURFACE PLATES ON ZINC

Complete Procedure	Platemaking Steps	
Steps Listed in Order of Making the Plate	Short Cutters—Omit Numbered Steps only—Highest Numbers First	
Counter-etch	Counter-etch	BASIC
Pre-Treatment	Coat and expose	BASIC
Coat and expose	Developing ink	BASIC
Apply non-blinding lacquer	Develop	BASIC
Apply developing ink	Post-Treatment	PLATE
Develop	Etch[1]	PLATE
Ammonia Rinse	Gum	PLATE
Post-Treatment	1. Apply non-blinding lacquer	
Powder	2. Second etch[2]	
Etch	3. Asphaltum	
Apply second etch	4. Ammonia rinse[4]	
Gum	5. Powder	
Asphaltum	6. Pre-Treatment[3]	

[1]In all cases, and with all gum etches, the etch must be dried down.
[2]Second etch is usually not necessary on plates smaller than 35 x 45 inches.
[3]Pre-Treatments like pre-etch or pre-Cronak are usually done to make it easier to develop the plate. Ordinarily, they are needed only under extremely bad conditions of high humidity and high temperature or with certain brands of casein coatings. In practically all cases, you can avoid difficult development by using a little thicker coating on the plate.
[4]The ammonia rinse is an essential step in making the basic plate with soybean, casein, and certain modified casein coatings.

Pass it along

Many printing plant executives pass along copies of *Printing Equipment Engineer* regularly to interested employees in the plant. In this way, a more interested production organization will be maintained.



Bindery Machine *counts and stacks magazines at high speeds—Developed in plant of Popular Mechanics Co., Chicago—Adjustable to handle magazines of any size.*

A NEW bindery machine is designed to count and stack magazines at high speeds with low maintenance and operating cost. Developed especially for the Popular Mechanics Co. by Plant Engineer W. H. Taylor, the machine counts and stacks a predetermined number of the magazines from the covering machine, then passes the stacked magazines onto a conveyor belt for delivery to the trimmer.

In its first year of operation, the machine has saved more than $15 thousand in operating costs, according to Taylor. Patent applications on the device are pending, and it will be put on the market as soon as suitable arrangements can be made with a manufacturer.

The machine is a package unit that can be easily installed and connected to a conveyor system feeding any subsequent operation. A dial setting determines the number of books or magazines delivered in each stack. Because the count is not recorded until magazines reach the stacking hopper, removal of any copies ahead of the hopper does not affect the count in the stack.

Formerly, two employees worked 'round the clock (a total of six employees) counting and stacking copies of the magazine and other publications issued by the company. The workers handled the books on a slow conveyor belt ahead of the automatic trimmer at the rate of 147 copies per min. This speed made the job monotonous as well as expensive, and there was always the possibility that the count would not be accurate.

H. H. Windsor, jr., Editor and Publisher of *Popular Mechanics Magazine*, noticed the inefficient and expensive operation and asked Taylor to find a machine that would solve the problem. When no such device could be located, Taylor decided to build a machine with which the operation could be handled.

The machine, which handles 8700 copies per hour, can be adjusted in 30 min. to handle publications of any size. More than 24 million side-stitched publications issued during the year by Popular Mechanics Co. have gone through Taylor's stacking machine without breakdowns. If a breakdown should occur, the stacking mechanism can be opened and the magazines allowed to pass through for hand counting and stacking.

Roller Setting Methods on Newspaper Presses

(Abstracted from a talk by Pressroom Supt. Robert Adams, Canton (O.) *Repository*, before the Great Lakes Newspaper Mechanical Conference, Detroit, January 1955)

The time spent on setting press rollers, whether they are old or new, will pay big dividends in a better printed paper and longer roller life. When rollers are first put into a press unit, they must be properly set. This may be done by a number of methods. Rollers should be set as light as possible and still make positive contact with plates and drums. Heavy set rollers will cause uneven swelling and wear on the roller sockets.

Slip Sheet Method

In the slip sheet method, a strip of newsprint or kraft paper about 5 in. wide is folded and a 2 in. wide strip of paper is inserted as a slip sheet into the folded paper. The slip sheet is then placed between the roller and/or plate and ink drum approx. 5 in. from each end of the roller. When using this method of setting rollers, the pressman should be able to pull the slip sheet snugly but not tight at the point of contact between the roller, plate or inking drum. There must be an identical amount of pull on the strip at each end of the roller for a parallel setting.

Single Sheet Method

When setting rollers by the single sheet direct impression method, strips of unprinted newsprint approx. 4 in. wide are placed between the plate and ink drum as near to the end of the roller as possible. As the rollers are locked up, an inked impression of the setting is made on the strip of paper. When the rollers are released, the paper can be removed and the width of the impression compared on each end of the roller. They can then be set the required width. This method is considered the most accurate for roller setting.

Other Methods

Another method is to have all plates in position and the press unit webbed up. The roller is set against the ink drum or plate, hard or light, depending on the judgment of the pressman, or the two methods previously described may be used for the initial setting. The press unit is run for one or two revolutions and then stopped. Further adjustments may be necessary to secure the desired impression representative of the roller contact. When the unit is turned over again, the pressman can visually check the width of impression which will be evident on the printed web and also on the ink drum. An important point to remember is that while setting one form roller the cap on the opposite form roller must be loosened so as not to leave or show an impression other than that of the form roller being set.

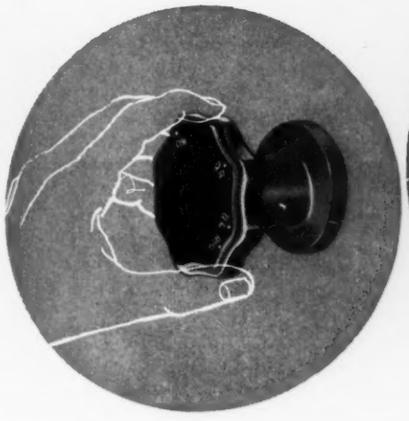
A popular method in the past was to set rollers to a given number of lines. This has not proved practical because all lines are not the same size and are not leaded equally.

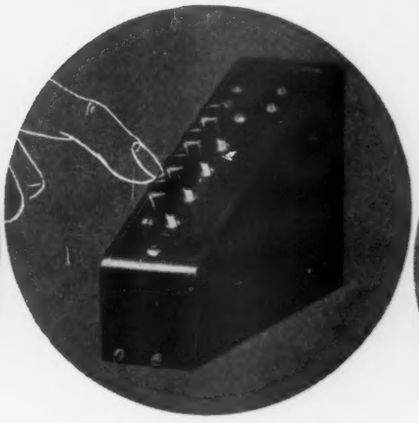
The following roller setting widths should give a pretty accurate setting for all needs: 3/8 in. for 3 in. to 4 in. rollers; 7/16 in. for 4 in. to 5 in. rollers; 1/2 in. for 5 in. to 6 in. rollers; 5/8 in. for 6 1/2 in. to 7 1/2 in. rollers.

Static Gauge

Researchers of Dayton Rubber Co., Dayton, O., recommend holding a 1/25th w. neon glow bulb near a V-Belt as a means for maintenance men and safety engineers to check for potentially dangerous static electricity. The bulb actually will light if there is static electricity around the belt. There will be less static electricity generated during a thunder and lightning storm or whenever it is damp. It's the dry days that are troublesome. Then there may be enough static electricity generated to knock the bulb out of your hand, and some kind of a holder is recommended. Attaching the bulb to the end of a pencil is a good idea. Conditions may warrant installation of specially designed static free V-Belts.

NEW... LINOTYPE'S HYDRAQUADDER OPERATES ALL 3 WAYS!





1 by Simple Knob Control

A knob enables the operator to mechanically direct all quadding functions. He merely turns the knob to any of the four indicated positions—*center, quad left, quad right, or regular*—and the Hydraquadder responds automatically.

2 by Electric Push-buttons

First to introduce push-button quadding, Linotype now offers the *simplest* electric push-button system. It eliminates operation by the mechanical knob, and features an advanced *printed* circuit unrivalled for permanence. With it, the operator merely pushes a button—the Hydraquadder does the rest.

3 by Tape Automatically

Quadders for tape operation also are an *original* Linotype development. The Hydraquadder's electric system is just plugged into a tape operating unit and the Hydraquadder responds to coded signals at speeds up to 12 lines a minute.

Whether operated by knob, push-buttons, or tape, the Hydraquadder gives you perfect accuracy of centering and margin. There is no mechanical linkage, and it needs no adjustments or maintenance other than normal lubrication.

This first *truly hydraulic* quadder cuts costs and increases production wherever composition requirements call for white space with lines set flush left, centered, or flush right. With the Hydraquadder, operators set quadded and centered matter at speeds *faster* than the simplest straight matter.

Hydraquadders can be installed on new machines at the factory or applied to Linotypes now in your plant. Write your Linotype Agency today for a brochure giving full details.

Only the Hydraquadder gives you all these advanced features:

Automatic change from push-button to tape operation—signals in the tape cancel any signals in the selector box.

Ultra-modern printed circuit in memory control box assures permanence and indestructability.

Quadding can be repeated automatically—In tape operation, a quadding position can be repeated continuously without a tape signal.

• LINOTYPE •

Mergenthaler Linotype Company, 29 Ryerson Street, Brooklyn 5, N.Y.

Set in Linotype Times Roman and members of the Spartan family

Agencies: Atlanta, Boston, Chicago, Cleveland, Dallas, Los Angeles, New York, San Francisco. **In Canada:** Canadian Linotype, Limited, Toronto, Ontario

LEADERSHIP THROUGH RESEARCH

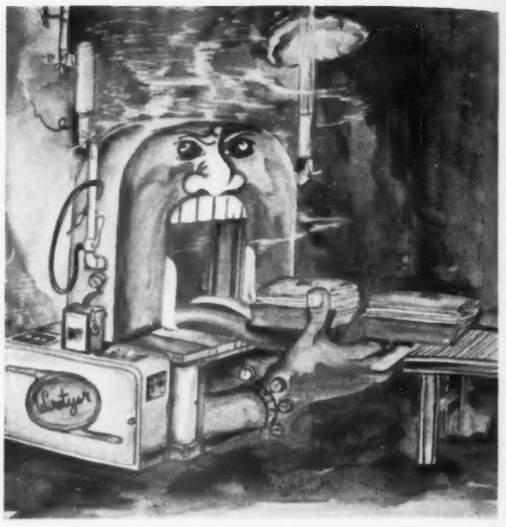
Samuel M. Burt

Samuel M. Burt is a busy person. He is executive secretary of the Education Council of the Graphic Arts Industry, an organization of printers and printing trade associations interested in developing a system of Graphic Arts education to meet the industry's manpower problems. He is also executive secretary of the Intl. Graphic Arts Education Assoc., the professional organization of Graphic Arts printing teachers. Burt also finds time to be executive secretary of Gamma Epsilon Tau, college student honorary Graphic Arts society. He received his teacher training education at Temple University in Philadelphia and his Masters degree in Business Administration at the University of Pennsylvania.

His first contact with the printing industry was less than 11 years ago when he helped reorganize the printing plant operated by the Army in the Pentagon and where he helped develop a production control and a personnel training program. He then went with the Bureau of the Budget where his job was to bring better management practices into Government agency printing plants. Subsequently he was with Educational Testing Service, Princeton, N. J., as buyer of printing and director of a printing school in Philadelphia before coming with the Education Council. He has written articles on printing plant management. Before this he made his reputation as a spokesman for adequate educational and training programs for the Graphic Arts industry. In his dual position as executive secretary for the council and the Intl. Graphic Arts Education Assoc., he brings industry and teachers together to work on the industry's manpower problems.

Please take a look at your address on the wrapper in which *Printing Equipment Engineer* is sent to you at your place of employment. If it isn't correct, please tell us about it on a postcard.

The comparatively recent stepped-up introduction of wire tying machines in mechanized mailrooms in newspaper plants inspired this somewhat fanciful interpretation by Walter Neal, an employee of the recently modernized mailroom of the Akron (O.) *Beacon-Journal*. Aided and abetted manually by mailers who separate the papers into stacks with top and bottom wrapper, capacity of the machine's capacious maw is from 15 to 21 bundles of newspapers per min. neatly bound with two wires as fast as they come from the Jampol conveyor. Anyhow, Neal created his impression of automatic wire tying vs. hand tying to indicate the elimination of human fatigue in the latter method.

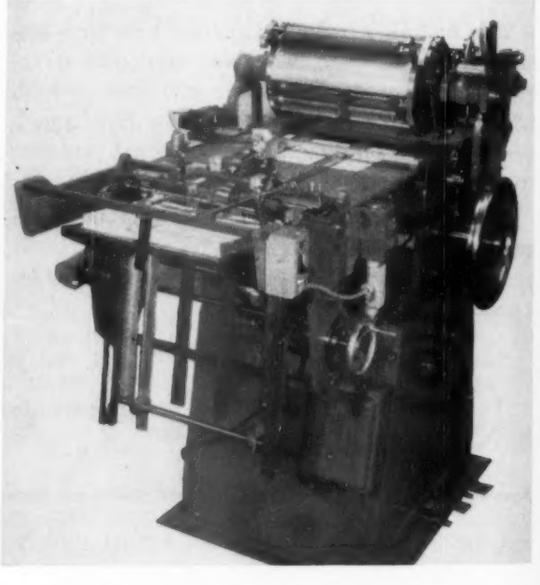


LNA and Bank Stationers' Check Imprinting Press

The development of an imprinting press, which was undertaken as a cooperative project four years ago by members of the Bank Stationers' Section of the Lithographers National Assoc., Inc., has resulted in the manufacture of a machine for the offset industry. The project, which culminated with the installation of three of the presses in LNA member company plants, was under the leadership of the section's Imprinting Machine Committee composed of Chairman Cecil N. Rudnick of Joseph Berg Mfg. Stationer Inc.; J. Anderson, Dennison & Sons; Walter D. Gemmill of Milton C. Johnson Co.; and J. H. Riggs, Young & Seldon Co. The project was coordinated by Edward D. Morris, LNA secretary.

The plan for the development of the press, which is rated at 10,000 individual check impressions an hour, was approved by LNA's board of directors on Jan. 31, 1951. Sixteen individual members of the Bank Stationers' Section subscribed to a special fund and entered into contract with the Stoessel Machinery Mfg. Co. for development and manufacture of a pilot model. LNA acted as custodian of the funds and as agent for the group in the negotiation of this contract. The Imprinting Machine Committee held 25 meetings of planning, testing and improvement of a pilot model which was built and tested under actual production conditions by technical experts from several of the 16 plants involved. Final acceptance was in August 1954 and the first production lot of eight machines is now on the way to completion.

The press is equipped with a full length adjustable side guide. The sheet is controlled from the automatic feeder to the pile delivery by a series of rubber rollers set at a slight angle to hold the sheet against the side guide. The machine prints from one type slug and is designed to handle checks from 2¾ in. to 3½ in. wide and 14 in. long, including check and stub. Ink distribution is accomplished through two sets of three rollers which revolve around the printing drum. Each set of rollers is made up of a form roller, an oscillating roller and a rider roller, all of different diameters for maximum ink distribution. The press is equipped with an automatic brake which stops it after one impression and with the printing drum in raised position. Microswitches are used for automatic stops if a sheet does not feed or if two or more sheets are fed. Another feature, for laying the packing and makeready, is the tympan wind up device on a removable impression bed which slides out of the machine. The chase is accessible for changing forms by turning the imprinting drum.



The bank stationers' new imprinting press was developed through a cooperative project with the Imprinting Machine Committee of Lithographers National Assoc., Inc. The imprinting press, manufactured by the Stoessel Machinery Mfg. Co., can be operated at a speed of 10,000 individual check impressions an hour.

Graphic Arts Equipment and Supplies

Literature for the Asking

Keep Yourself Informed. The folders and bulletins listed below all pertain to modern equipment, supplies, processes and/or methods. These have been prepared especially for plant managers, superintendents and foremen. Please ask for the pieces selected by number and send your request to Literature Dept., *Printing Equipment Engineer*, 1276 West Third St., Cleveland 13, Ohio.

Composing Room

METAL TRIMMER

The Monomelt Co., Inc. has released a one page leaflet descriptive of the Metal-Knife for trimming plates and stereotypes. The four models of trimmers are briefly described and specifications are given. Available in widths of 6 in., 9 in., 12 in. and 24 in., the Metal-Knife will cut zinc, copper, and lead. For a copy, please mention PEE No. 378L in your request.

SPARTAN BOLD SPECIMEN FOLDER

A specimen folder of its recently introduced Spartan Bold type face is now available it was announced by Mergenthaler Linotype Co. The four page, two color folder briefly reviews Linotype's complete Spartan family and shows the Spartan Bold as a headletter face. For a copy, please mention PEE No. 379L in your request.

SAW SWAGER AND SAW FILER

Two 3¾ in. by 6¼ in. six-page folders are used to describe the Tesch Mfg. Co. automatic saw swager and the company's automatic saw filer. The compact folders give specifications and operating data on each item. Keyed photographs give the names of main operating parts. For a copy of either folder, please mention PEE No. 380L in your request.

Platemaking

BURNING-IN STOVE

A "double" oscillating stove designed for use of burning-in plates 24 in. by 36 in. is described in a one-page, 8½ in. by 11 in. bulletin published by the Master Etching Machine Co. The same stove can be used by either one or two etchers at the same time working on smaller plates, says the manufacturer. For a copy, please mention PEE No. 381L in you request.

LINE-UP AND REGISTER TABLE

A one-page, 8½ in. by 11 in. bulletin is used to describe the Gelb Line-Up and Register Table, manufactured by the Jos. Gelb Co. and available in the following sizes: 44 in. by 64 in.; 51 in. by 76 in.; and 62 in. by 84 in. For a copy, please mention PEE No. 382L in your request.

PROCESS DARKROOM CAMERAS

Consolidated Photo Engravers and Lithographers Equipment Co. has issued an eight page folder on its 24 in. and 31 in. process darkroom cameras. Features of the cameras, illustrated and described in the folder, include the light-tight rear case, new vacuum back, self-balancing all-metal copyboard, diaphragm control, focusing dial, timer, automatic electric shutter and flash lamps. Specifications and detailed floor plans are also included. Please mention PEE No. 383L when requesting a copy.

DIMENSIONAL STABILITY OF FILM

A three fold, six page Eastman Kodak publication concerning dimensional stability of film is now available. The leaflet is explanatory of why photographic films change size, and in it are provided some dimensional stability data for both cellulose ester and polystyrene base film sheets. Also included in the leaflet is a table of average dimensional change values for Kodak Sheet Films. For a copy, please mention PEE No. 384L in your request.

MOUNTING PRESS AND PLATE POLISHING

The Natsco automatic mounting press and the two speed, flexible shaft, plate polishing machine are illustrated and described in a two page leaflet released by National Steel & Copper Plate Co. Specifications and features of both are included. The mounting press features controlled heat and pressure. The plate polishing machine removes grease, wax, and corrosion from zinc and copper flats. For a copy, please mention PEE No 385L in your request.

GRAPHIC ARTS CHEMICALS

In a 28 page, 4 in. by 9 in booklet, are listed and described Mallinckrodt Chemical Works' chemicals for the Graphic Arts. In it are included such items as etching powder, cold top enamels, plate-making solutions, developers and cold top enamel developers. Also included is a list of distributors of Mallinckrodt chemicals. For a copy, please mention PEE No. 386L in your request.

ENGRAVERS ZINC

A reprint of Louis Fladers article, ***It's Just Engravers' Zinc***, which appeared in the ***Photoengravers Bulletin***, has been made available by Atlantic Zinc Works, Inc. The booklet reports what was seen and heard during an inspection tour recently taken by the executive committee of the American Photoengravers Assoc. through the plant of Atlantic Zinc Works, producers of engraving metals for the trade. For a copy, please mention PEE No. 387L in your request.

Pressroom

ROTOGRAVURE PRESS BULLETIN

In a four page illustrated letterhead size bulletin, The Cottrell Co. describes briefly its rotogravure presses for printing multicolor commercial, magazine and newspaper supplements with folder equipment. Please mention PEE No. 388L when requesting a copy.

SIDE DELIVERY PRESS

The Chandler & Price Co. has prepared a four page, letterhead size illustrated bulletin in which is described the C&P Craftsman Side Delivery Platen Press in 10 in. by 15 in. and 12 in. by 18 in. sizes. Features of the press are illustrated. Please mention PEE No. 389L in your request.

MULTICOLOR SAMPLE PACKET

A packet containing a special report on the subject of ***Multi-color by Overprinting with Flexographic Inks***, together with samples of film and paper printed with the overprinting technique, is being offered to printers by Bensing Bros. & Deeney, makers of BBD flexographic inks. The packet was designed to show how three ink colors can be used in straight line printing to obtain four additional colors at no extra cost. For a copy, please mention PEE No. 390L in your request.

JOGGING MACHINES

Brackett Stripping Machine Co. has an 8½ in. by 11 in., two-color, four-page folder in which are described the company's various models of joggers. Each of five sizes of jogger is illustrated by a photograph. Sizes include 15 in. by 15 in.; 20 in. by 20 in.; 30 in. by 30 in.; 38 in. by 38 in.; and 48 in. by 48 in. Features and specifications of each model are listed, including a description of the power lift on the 48 by 48 model. For a copy of the folder, please mention PEE No. 391L in your request.

KLUGE PRESS

The Kluge 12 by 18 automatic press with 13 in. capacity is described in a two-page, 8½ in. by 11 in. bulletin prepared for Brandtjen & Kluge, Inc. The overall dimensions of the press are 54 in. by 75 in. For a copy, please mention PEE No. 392L in your request.

FLEXOGRAPHIC PRINTING PRESS

Specifications and description of the Dilts Machine Works Division, Black-Clawson Co., flexographic printing press, model P-F, are available in a two-page release. The manufacturer says model P-F can be furnished in standard sizes in 24 in., 30 in., 36 in., 42 in., 38 in., and 54 in., and special designs for wider applications. For a copy, please mention PEE No. 393L in your request.

NUMBERING MACHINES

The Wetter Numbering Machine Co. line of numbering machines is described in a 3 in. by 6¼ in., 16-page, fold-out pamphlet. Liberal photographs illustrate the various

Literature Request Coupon

After you have selected the literature described in these pages which you would like to have sent to you, please jot down the identification numbers on this coupon and mail to

PRINTING EQUIPMENT *Engineer*
1276 West Third St., Cleveland 13, Ohio

Literature Number(s) _____

_____

Your Name and Title _____

Company Name _____

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City _____ Zone _____ State _____

models and many specifications are included. For a copy, please mention PEE No. 394L in your request.

TAYLOR REGISTERSCOPE

The Taylor Machine Co.'s Registerscope is described in a four-page, two-color, 8½ in. by 11 in. bulletin. Included in the bulletin is an unretouched photograph of what you see when using the Registerscope, says the manufacturer. A Registerscope model for use on rotary presses also is briefly described. For a copy, please mention PEE No. 395L in your request.

STATIC CONTROL EQUIPMENT

A four-page, two-color, 8½ in. by 11 in. bulletin is used to describe the Takk line of static eliminators, national sales agents, the John Hewson Co. The well-illustrated booklet shows separate units and installations. For a copy, please mention PEE No. 396L in your request.

MILLER TWO-COLOR PRESS

An eight-page, 7¾ in. by 10¼ in., fold-out bulletin is used to describe the Miller 27 in. by 41 in. TY Two-Color Press. Theme of the piece is that it takes a fine tool in the hands of a fine craftsman to reproduce fine art. Well-illustrated, introductory bulletin. For a copy, please mention PEE No. 397L in your request.

AUTOMATIC PAPER LIFT

A simple, 3½ in. by 8½ in. bulletin announces the newest addition to the Rathbun & Bird Co., Inc. line of Graphic Arts equipment. A photograph of the unit attached to a Miehle press is included. For a copy, please mention PEE No. 398L in your request.

RETRACTABLE BOARD HOLDER

Winton Engineering Co. has published a four-page, two-color, 8½ in. by 11 in. bulletin describing its Retractable Board Holder. This device enables printers to stack a skid with multiple decks of printed sheets, says the manufacturer. Photographs and diagrams are used to explain the device. For a copy, please mention PEE No. 399L in your request.

ELECTRONIC REGISTER CONTROL

A web scanner, phase detector and control panel are incorporated in the Champlain Co., Inc.'s Registron for automatic cutoff and color register in high speed rotary work. The components of Registron are fully described and illustrated in a four page bulletin. Registron is a control system in itself, an instrument group used for control in various printing, cutting, and blanking operations. For a copy, please mention PEE No. 400L in your request.

INK-O-SAVER

Acrolite Products, Inc. has released a leaflet descriptive of Ink-O-Saver, a non-flammable spray which prevents skinning of offset and letterpress printing inks. The spray bomb can be used in ink fountains, cans, mixing tables and on forms and cuts. The spray will not affect color, viscosity or drying. For a copy, please mention PEE No. 401L in your request.

COUNTER AND TABBER

The Tally-Tab, manufactured by Miller-Lauffer Printing Equipment Co., is illustrated and described in a two page bulletin. The Tally-Tab counts 25, 50, 100, 250 and 500, and is resettable to zero at any time. The makeup switch corrects the count for misses in the press or for sheets pulled out for inspection. The counter can be used on any size press, creaser or sheeter and fits any style of pile delivery. For a copy, please mention PEE No. 402L in your request.

BOOK PAPER

Color on the new Hudson Gloss is the theme of a three fold, six page brochure released by International Paper Co. The brochure demonstrates the printing qualities of a process-coated book paper, Hudson Gloss, for letterpress printing of catalogs, cookbooks, resort and travel folders, booklets, etc. For a copy, please mention PEE No. 403L in your request.

Bindery

ROLL TO SHEET COLLATOR

A description of the Speed-Flex six part roll to sheet collator is contained in a two page bulletin issued by Orville Dutro & Son, Inc. Features of the collating machine, production possibilities and general specifications are included. The letterhead size bulletin is printed in two colors. Please mention PEE No. 404L when requesting a copy.

ROLL LEAF CUTTING MACHINE

Specifications and a description of the Peerless Circular Knive Roll Leaf Cutting Machine are included in a one-page, two-color, 8½ in. by 11 in. bulletin published by the Peerless Roll Leaf Co., Inc. For a copy, please mention PEE No. 405L in your request.

Miscellaneous

MEASURING INSTRUMENTS

The Princo line of thermometers, barometers, hydrometers, thermostats, and density control devices are described in a series of 8½ in. by 11 in. bulletins, published by the Precision Thermometer & Instrument Co. Well-illustrated and complete with many specifications and tables of performance data, the bulletins are informative for industrial users of these instruments. When requesting a copy, please mention PEE No. 406L.

POWER AND HAND LIFT TRUCKS

Revolvator Co.'s line of power and hand lift trucks are described and shown in an 8½ in. by 11 in., two-color, four-page pictorial index. Twenty-two different types and models are included. For a copy, please mention PEE No. 407L in your request.

LITHOGRAPHIC SUPPLIES

Senefelder Co., Inc.'s line of supplies for lithography is described in an informative, 62-page, 4 in. by 6½ in. booklet, Entitled *Everything for Lithography*, the booklet contains some history of the lithographic process and some of the technical considerations in choosing lithographic supplies. For a copy, please mention PEE No. 408L in your request.

PRE-PRESS EQUIPMENT

Vandercook & Sons, Inc. has issued a 32 page, two color booklet descriptive of Vandercook pre-press equipment. The booklet is beautifully printed by letterpress and was produced in the Vandercook Research Laboratory on a Miller 21-28 TW Two-Color press from original halftones and monotype. Halftones were mounted on Vandercook Lite-Base and pages were made up and justified on a Vandercook 68 Makeup Gauge. The Vandercook minimum makeready method was used. In the booklet are included sections on test presses; the short run press; the dry offset press; small proof presses; newspaper proof presses; hand and power galley proof presses; the page makeup gauge; plate, type and slug gauges; the block leveller and Vandercook minimum makeready system. Complete specifications and illustrations for each of the above items are included. For a copy, please mention PEE No. 409L in your request.

BUSINESS PUBLICATION COLORS

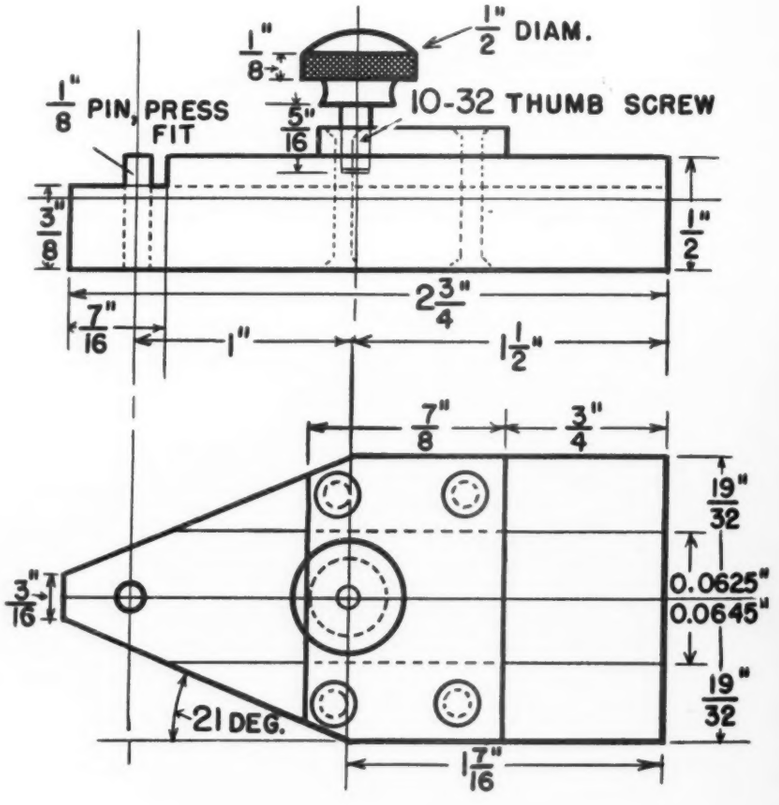
The American Assoc. of Advertising Agencies, Associated Business Publications, and National Business Publications jointly released the second edition of the report *Recommended Standard Second Colors for Business Publications*. In the 12 page edition are contained specimens of the five colors and hues offered by business publications, red, blue, green, yellow and orange. For a copy, please mention PEE No. 410L in your request.

INDUSTRIAL TRUCKS

Twenty-four cost cutting ideas with industrial trucks are contained in a new broadside released by The Elwell-Parker Electric Co. Fork trucks, low and high lift platform trucks, and other models are pictured and described. Case examples taken from various industries are included with a wide variety of loads. For a copy, please mention PEE No. 411L in your request.

FUSIBLE SERVICE ENTRANCE EQUIPMENT

A two color, 16 page booklet, descriptive of G.-E.'s new line of fusible service entrance equipment has been made available by General Electric Co., Trumbull Components Dept. The bulletin explains the features of seven basic types of fusible service entrance devices. Also included are ratings, wiring diagrams, dimensions and complete ordering information for the G.-E. fusible devices. For a copy, please mention PEE No. 412L in your request.



Spaceband Filing Block—*This working diagram will enable the machinist to make a spaceband filing block. Purpose of the block is to provide a means for tapering off the lower ends of the spaceband long wedge so the spaceband itself will settle readily in the assembler on TTS operated linecomposing machines. The dimensions shown in the working diagram are self-explanatory. The block can be made from cold rolled steel, afterwards case hardening it. In use, and after the lower end of the long wedge has been shaped with a file, remove the spaceband from the block and finish rounding that part of the edge where the taper starts. Abrasive cloth may then be used to polish the rounded and tapered section of the spaceband.*

Conference Dates

(With Organization Name and Principal Officer)

American Photoengravers Assoc. — 1955 Conv., Waldorf-Astoria Hotel, New York, N. Y., Oct. 10-12. Exec. Secy. Frank J. Schreiber, 166 W. Van Buren St., Rm. 430-A, Chicago 4, Ill.

Book Manufacturers' Institute—1955 Conf., The Greenbrier, White Sulphur Springs, W. Va., Oct. 13-15. Secy. Miss A. G. Watson, 25 W. 43rd St., New York 36, N. Y.

Fifth District Craftsmen's Conf. — 1956 Conf., Hotel Cleveland, Cleveland, O., June 1-2. Secy.-Treas. Dave Walker, Adm. Asst., Graphic Arts Assoc. of Michigan, 320 W. Lafayette St., Detroit 26.

Graphic Arts Trade Assoc. Executives — 1955 Meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., Oct. 13, 14. Secy.-Treas. Arthur L. Johnson, Graphic Arts Assoc. of Milwaukee, 704 W. Wisconsin Ave., Milwaukee 3, Wis.

Gravure Technical Assoc. — 1956 Annual Meeting, Hotel Biltmore, New York, N. Y., Feb. 1-3. Secy. Len S. Pinover, Room 4800, 30 Rockefeller Plaza, New York 20, N. Y.

Great Lakes Newspaper Mechanical Conf. —1956 Conf., Schroeder Hotel, Milwaukee, Wis., Jan. 29, 30, 31. Secy-Treas. Don Clark, Stereotype Supt., Grand Rapids (Mich.) *Press.*

Illinois Newspaper Mechanical Conf. — 1955 Conf., Leland Hotel, Aurora, Ill., Sept. 24, 25. Secy.-Treas. Arthur Kramer, Joliet (Ill.) *Herald-News.*

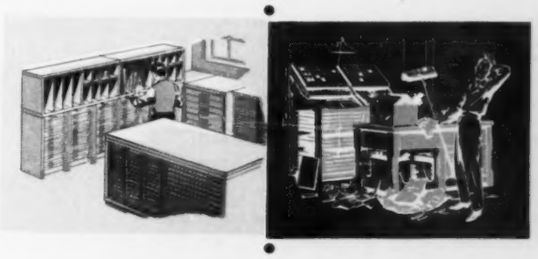
SOLD BY

Western Newspaper Union

E. C. Palmer & Co.

Harry W. Brintnall Co.

Another boost from Hamilton toward higher Composing Room Profits!



Proof and specimen cabinets for safe, clean, convenient storage

Protect valuable artwork and proofs, save time locating mats, make well-organized use of floor and storage space . and you'll naturally increase composing room efficiency to cut operating costs. That's why all-steel proof and specimen cabinets are highly rated members of the Hamilton storage cabinet family.

Drawers hold materials flat, walled away from damage by heavy steel yet easily accessible. A black canvas cover fastens completely over each drawer to keep out dust. Drawers run smoothly on rollers, are removable but protected from accidental pull-outs by safety stops. Furthermore, these five- and three-drawer units can interlock to build storage upward on the same floor area.

There's sense and profit in providing such efficient long-term protection for mats, proofs, negatives, etc. Get the whole story from your Hamilton dealer soon.

Five-Drawer Proof and Specimen Cabinet No. 1032 — 46 1/16" wide x 35 1/2" deep x 15 3/8" high. Hamilton Three-Drawer unit (No. 1232) also available, can be interlocked with Five-Drawer (using flat cap and base) to increase storage space without adding floor space.

Also by Hamilton: outstanding type cabinets, imposing tables, newspaper tables, ad assembly cabinets, galley cabinets, chase racks, work benches, trucks, miscellaneous units and accessories of many kinds.

Hamilton PRINTERS EQUIPMENT

HAMILTON MANUFACTURING COMPANY • Two Rivers, Wisconsin

Intl. Assoc. Electrotypers & Stereotypers—1955 Conf., Shoreham Hotel, Washington, D. C., Oct. 19-22. Exec. Secy. A. P. Schloegel, 701 Leader Bldg., Cleveland 14.

Intl. Assoc. of Printing House Craftsmen—1956 Conv., Biltmore Hotel, Los Angeles, Aug. 12-15. Exec. Secy. Pearl E. Oldt, Rm. 806, Transportation Bldg., 307 E. Fourth St., Cincinnati 2, O.

Intl. Graphic Arts Education Assoc.—Exec. Secy. Samuel M. Burt, 719 Fifteenth St. N. W., Washington 5, D. C.

Intl. Printers Supply Salesmen's Guild — 1956 Conv., Biltmore Hotel, Los Angeles, Aug. 12-15. Secv. Louis A. Croplis, American Type Founders, 555 Broadway, New York 12, N. Y.

Intl. Typographic Composition Assoc. — Secy. Frank M. Sherman, 1015 Chestnut St., Philadelphia 7.

Iowa Daily Newspaper Mechanical Conf. Secy.-Treas. Paul F. Kamler, Mechanical Supt., Clinton (Ia.) *Herald*.

Kansas-Missouri Newspaper Mechanical Conf. — Kansas Secy.-Treas. Larry Miller, Kansas Press Assoc., 701 Jackson St., Topeka, Kans. Missouri Secy.-Treas. William A. Bray, Missouri Press Assoc., 220 Walter Williams Hall, Columbia, Mo.

Lithographers National Assoc., Inc.—1956 Conv., Drake Hotel, Chicago, Ill., May 10-12. Exec. Dir. W. Floyd Maxwell, 420 Lexington Ave., New York 17, N. Y.

Mid-Atlantic Newspaper Mechanical Conf. —1956 Conf., Lord Baltimore Hotel, Baltimore, Md., March 8-10. Conf. Dir. Theodore A. Serrill, PNPA General Mgr., 300-312 Telegraph Bldg., Harrisburg, Pa.

National Assoc. of Litho Clubs—1956 Conv., Lord Baltimore Hotel, Baltimore, Md., April 20-21. Exec. Secy. Elton N. Baker, 833 N. Orleans St., Chicago 10, Ill.

National Assoc. of Photo-Lithographers—1955 Conf., Hotel Statler, Cleveland, O., Sept. 21-24. Walter S. Soderstrom, 317 W. 45th St., New York 36, N. Y.

National Printing Equipment Assoc., Inc.—1955 Conv. meets concurrently with Printing Industry of America, Hotel Chalfonte-Haddon Hall, Atlantic City, N. J. Secy. James E. Bennet, 140 Nassau St., New York 38, N. Y.

National Safety Council Printing and Publishing Section—1955 Meeting, Conrad Hilton Hotel, Chicago, Oct. 17-19. Staff Rep. James D. Saul, National Safety Council, 425 N. Michigan Ave., Chicago 11.

New England Mechanical Conf. — 1955 Conf., Hotel Statler, Boston, Mass., Oct. 15, 16. Secy.-Treas. Walter C. Crighton, Comp. Room Supt., New London (Conn.) *Day*.

New York State Capital District Mechanical Conf. — 1956 Conf., Sheraton-Ten Eyck Hotel, Albany, N. Y., Jan. 28, 29. Dir. Floyd Laurenty, Schenectady (N. Y.) *Union-Star*.

Northwest Mechanical Conf.—1956 Conf., tentatively set for Radisson Hotel, Minneapolis, Minn., Feb. 18-20. Secy.-Treas. Ralph N. Carson, Linecasting Instructor, Dunwoody Industrial Institute, 818 Wayzata Blvd., Minneapolis.

Pacific Mechanical Conf. — Secy. Edward Maggi, Phillips and Van Orden, 870 Brannan St., San Francisco 3.

Packaging Institute Assoc. — 1955 Forum, Hotel Statler, New York, N. Y., Nov. 1, 2. Exec. Dir. Laurence V. Burton, 342 Madison Ave., New York 17, N. Y.

Printing Industry of America—1955 Conf., Hotel Chalfonte-Haddon Hall, Atlantic City, N. J., Oct. 15-20. Gen. Mgr. James R. Brackett, 719 Fifteenth St., N. W., Washington 5, D. C.

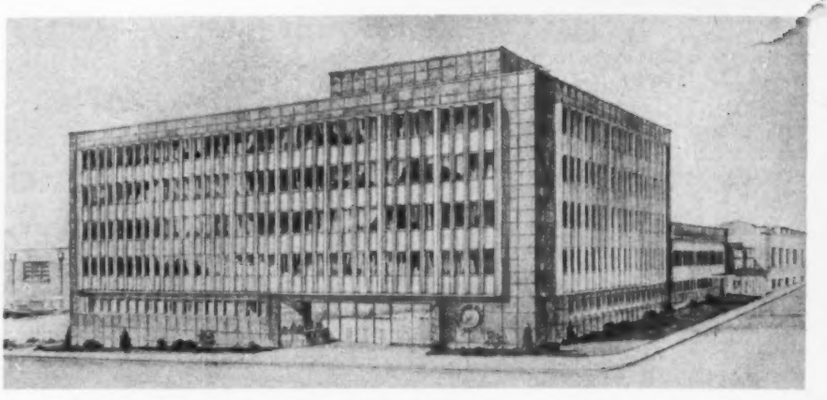
Research and Engineering Council of the Graphic Arts Industry, Inc.—1956 Meeting, Edgewater Beach Hotel, Chicago, Ill., May 9-11. Managing Dir. Robert E. Rossell, 719 Fifteenth St., N. W., Washington 5, D. C.

Screen Process Printing Assoc., Intl.—Exec. Secy. Robert H. Blundred, 549 W. Randolph St., Chicago 6.

SNPA (Eastern Div.) Mechanical Conf. — 1955 Conf., Hotel Roanoke, Roanoke, Va., Aug. 22, 23. Secy. Ray B. Crow, Southern Newspaper Publishers Assoc., P. O. Box 1569, Chattanooga 1, Tenn.

SNPA (Western Div.) Mechanical Conf.—Secy., Walter Johnson, jr., P. O. Box 1569, Chattanooga 1, Tenn.

Southern Graphic Arts Assoc.—1956 Conv., Eola Hotel, Natchez, Miss. Secy. Charles E. Kennedy, 1514 South St., Nashville, Tenn.



Artist's Sketch of The Methodist Publishing House—Contract will be awarded this fall for the construction of a five story building on a site adjoining the printing and binding plant of the Methodist Pub. House, Nashville, Tenn. The building was designed by Hart, Freeland and Roberts of Nashville, and estimated to cost $1½ million. Consolidation of business and editorial offices with the manufacturing plant will be possible. Design features of the building will include movable partitioning and year round air conditioning. Removal of the offices of R. G. Graham, director of manufacturing, and the production and methods departments into the new building will permit expansion of the offset department of the plant. Parking area now on the roof of the plant will be extended. Excavation was recently underway.

Hamilton Representatives Meet for Sales Conference—Hamilton Manufacturing Co.'s home office in Two Rivers, Wis., was the meeting place for all field representatives in the professional equipment division for the annual mid-summer sales meeting, July 11 through July 16. Sales activities, comprehensive market analysis and trends, review of competitive conditions, sales training and promotional plans were discussed. An important item on the agenda was a preview of designs for new equipment models now under development. The Hamilton representatives from left to right are: (front row) R. L. Perry, sales promotion manager; N. L. Johnson, Bromall, Pa.; C. E. Sorenson, Two Rivers, Wis.; R. W. Brunsman, Dallas, Tex.; (second row) H. R. Morris, Atlanta, Ga.; Val F. Hall, sales director, professional equipment division; R. M. Giblin, Willowick, O.; L. R. Mechler, Two Rivers, Wis., R. G. E. Cornish, Los Angeles, Calif.; (back row) H. A. Nack; R. E. Klinker; R. R. Cogswell, New York, N. Y.; R. G. Halvorsen, vice president in charge of sales.

Equipment Sales and Installations Reports

Wood Newspaper Equipment

THE DETROIT NEWS—In line with its expansion program designed to meet growing circulation requirements, the Detroit *News* has ordered six additional Wood Automatic Autopasters, manufactured by Wood Newspaper Machinery Co. The *News* is also installing 42 single page Wood Portable Color Ink Fountains in the pressroom.

LONG BEACH (CALIF.) INDEPENDENT PRESS-TELEGRAM to meet its rapidly increasing circulation has ordered two Wood Automatic Autopasters. This purchase is the forerunner of additional equipment included in expansion plans for pressroom, reelroom and stereotype departments. Currently, the circulation of the *Independent Press-Telegram* exceeds 140,000.

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E. P. Lawson Equipment

Seventeen installations of Lawson equipment have recently been made by the E. P. Lawson Co., Inc., as announced by D. W. Schulkind, president of the company. They are as follows:

39 IN. HEAVY DUTY AUTOMATIC CLAMP CUTTER—Canterbury Printing Co., Rome, N. Y.; City Bindery Inc., New York, N. Y.; Robinson & Schoenfield, New York, N. Y.; Deluxe Check Printers, Clifton, N. J.; Advertising Tag & Printing Co., New York, N. Y.; H & H Bookbinding Co., New York, N. Y.; Mid-State Offset Printing Co., Syracuse, N. Y.

HEAVY DUTY AUTOMATIC HYDRAULIC CLAMP CUTTER—Clinton Paper Co., Lockhaven, Pa.; DuPont Printing Plant, Philadelphia, Pa.; Shaw's Incorporated, Philadelphia, Pa.; Printers Finishing & Binding Co., Washington, D. C.; Ozalid, Div. of General Aniline & Film Corp., Johnson City, N. Y.

RAPID AUTOMATIC THREE KNIFE TRIMMER—P. F. Mallon, Inc., Long Island City, N. Y.; Philadelphia Bindery, Philadelphia, Pa.

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Rosback Equipment

The following are installations of the F. P. Rosback Co. AUTO-STITCHER—Auburn Printing Co., Auburn, Ala. (by American Type Founders, Inc.); Phillips Printing Co., Mobile, Ala. (by E. C. Palmer); Lebeau Printing Co., Phoenix, Ariz. (by A. E. Heinsohn Co.); Desert Press, Inc., Palm Desert, Calif. (by Harry W. Brintnall); Crest Printers, Inc., Sacramento, Calif. (by American Type Founders, Inc.); Alex Dulpher Lithographic Co., San Francisco (by American Type Founders, Inc.); John M. Reed, San Francisco (by American Type Founders, Inc.); William David and Son, San Mateo, Calif. (by American Type Founders, Inc.); Struots Photo Offset Inc., Glenbrook, Conn. (by E. P. Lawson); Byrons S. Adams Printing Co., Washington, D. C. (by George R. Keller Co.); American Trucking Assoc., Washington, D. C. (by George R. Keller, Inc.); Sentinel Printing Co., Indianapolis, Ind. (by Western Newspaper Union); Waverly Pub. Co., Waverly, Ia. (by Western Newspaper Union); U. S. Dept. of Interior, Laurence, Kan. (by Missouri Central Type Foundry); American Gumming Co., Boston (by Wild & Stevens, Inc.); Lorell Co., Inc., Boston (by E. P. Lawson); The Detroit Edison Co., Detroit, Mich. (by Tompkins Printing Equipment Co.); Robert Love Co., Detroit (by M. L. Abrams); Holy Land Christian Mission, Kansas City, Mo. (by Tompkins Printing Equipment Co.); Esso Research Engineering Co., Linden, N. J. (by American Type Founders, Inc.); Poole Printers, Inc., North Bergen, N. J. (by American Type Founders, Inc.); Eddy Printing Co., Albion, N. Y. (by Alan Dietch Printing Equipment); A. Colish, Inc., Mount Vernon, N. Y. (by Irving Nissenbaum, Inc.); Free Will Baptist Press, Inc., Ayden, N. C. (by American Type Founders, Inc.); Walker Evans, & Cogswell, Charleston, N. C. (by Harris-Seybold Co.); American Printing & Pub. Co., Akron, O. (by American Type Founders, Inc.); Charles Sternberg & Co., Cincinnati, O. (by Nessler & Wagner Co.); Fulwider Printing Co., Columbus, O. (by American Type Founders, Inc.); J. J. Jones & Son, Erie, Pa. (by Buffalo Printers Supply); Lancaster Press, Lancaster, Pa. (by American Type Founders, Inc.); Century Printing Co., Pittsburgh (by American Type Founders, Inc.); Polish Weekly Straz, Scranton, Pa. (by American Type Founders, Inc.); E. A. Johnson Co., Providence, R. I. (by Wild and Stevens, Inc.); Leamon-Hogan Co., Houston, Tex. (by Western Newspaper Supply); Mitchell & Hotchkiss, Richmond, Va. (by American Type Founders, Inc.); Virginia Stationery Co., Richmond, Va., (by George R. Keller, Inc.); Cuna Supply Cooperative, Madison, Wis. (by Addressograph-Multigraph Corp.).

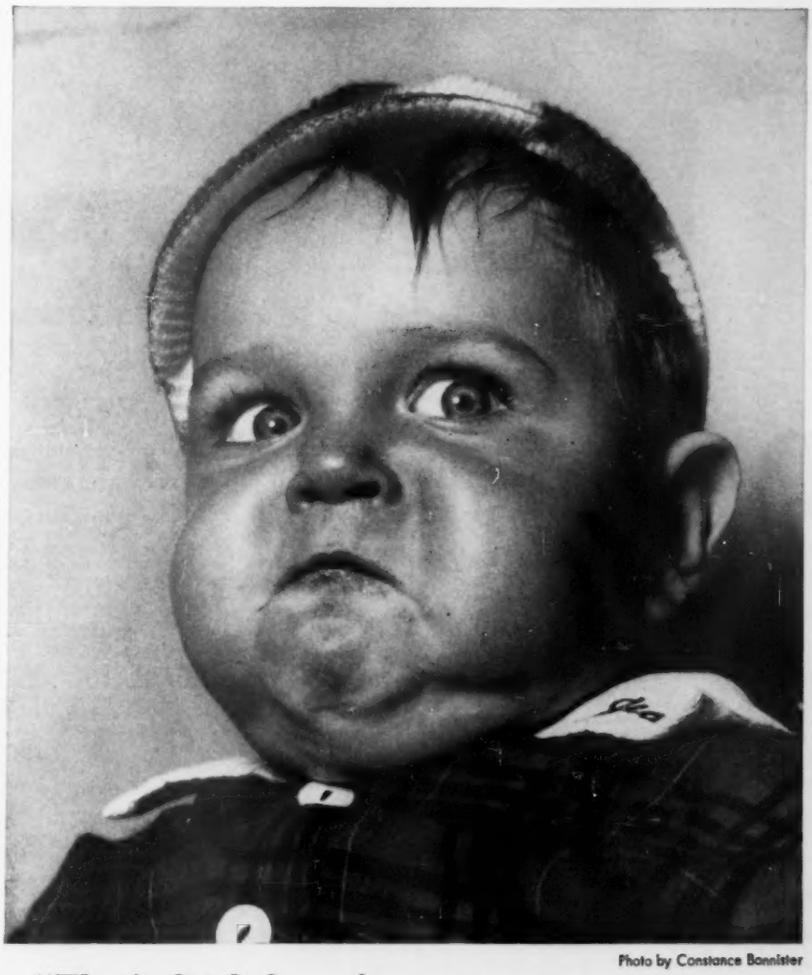
TWENTY-TWO SPECIAL PERFORATOR—Admat Co., Mobile, Ala. (by E. C. Palmer); Brown Printing Co., Montgomery, Ala. (by Southeastern Printers Supply); Mountain Wave Printing Co., Marshall, Ala. (by Western Newspaper Union); Newark Journal, Newark, N. J. (by Roach Printers Supply); American Offset Co., Hartford, Conn. (by Merit Printers Supply Co.); Kline's Modern Copy, Hammond, Ind. (by Type and Press of Ill.); Purcell Printing Co., Hampton, Ia. (by Western Newspaper Union); The Ulysses News, Ulysses, Kan. (by Western Newspaper Union); The May Co., Baltimore, Md. (by Addressograph-Multigraph); Stewart Jackson Printing Co., Flint, Mich. (by American Type Founders, Inc.); Mijo Lithographing Co., Yazoo City, Miss. (by Western Newspaper Union); McWhirter Co., Printers, Kansas City, Mo. (by Western Newspaper Union); Western Life Insurance Co., Helena, Mont. (by Western Newspaper Union); Standard Form Service Co., Omaha, Neb. (by Western Paper Co.); Jersey Central Power and Light Co., Allenhurst, N. J. (by Addressograph-Multigraph); Simplified Tax Records, Inc., New York, N. Y. (by Harris Seybold Co.); Speed Bindery, New York, N. Y. (by Western Newspaper Union); Mainville Photography, Schenectady, N. Y. (by E. P. Lawson Co.); Central High School, Columbus, O. (by American Type Founders, Inc.); Norman Transcript, Norman, Okla. (by Western Newspaper Union); Research Oil Reports, Oklahoma City, Okla. (by Western Newspaper Union); The Oregon Printer, Portland, Ore. (by Harry W. Brintnall); South Greenburg Printing Co., Greenburg, Pa., (by Harry Guckert Co.); San Antonio Drug Co., San Antonio, Tex. (by Texas Type Foundry); Huntington East High Trade School, Huntington, W. Va. (by Addressograph-Multigraph).

30 IN. PONY VARI-SPEED PERFORATOR—Perkins Brothers, Sioux City, Ia. (by Western Newspaper Union); L. & H. Printing Co., Morgan City, La. (by E. C. Palmer); William Hood Dunwoody Industrial Institute, Minneapolis, Minn. (by Richardson Sovde Co., Inc.); J. L. Kagno Co., New York, N. Y. (by E. P. Lawson Co.); Plymouth Bindery, New York, N. Y. (by Ernest Payne Corp.); C. A. Stratton Co., New York, N. Y. (by Gane Bros and Co.); Western Bank and Office Supply, Oklahoma City, Okla. (by Western Newspaper Union); Basset Press and Mailing Co., Pittsburgh, Pa. (by American Type Founders, Inc.).

GANG STITCHERS—Four staple, Maxwell Air Force Base, Montgomery, Ala. (by Harry W. Brintnall); Ten Staple, Craftsman Press, Washington, D. C. (by American Type Founder., Inc.); Ten Staple, James F. Newcomb Co., Inc., New York, N. Y. (by Ernest Payne Corp.).

MISCELLANEOUS—Multiplex Check Perforator at Gast Banknote Co., St. Louis, Mo. (by Gane Brothers and Lane, Inc.); Super XX Heavy Power Perforator at Higgens Printing Co., Fort Worth, Tex. (by E. C. Palmer); 300 Series 30 in. Slot Perforator at The McBee Company, Ogden, Tex. (by A. E. Heinsohn).

Production and Mechanical Executives are invited to submit to the editor informally in a letter devices which have helped production in their plants.



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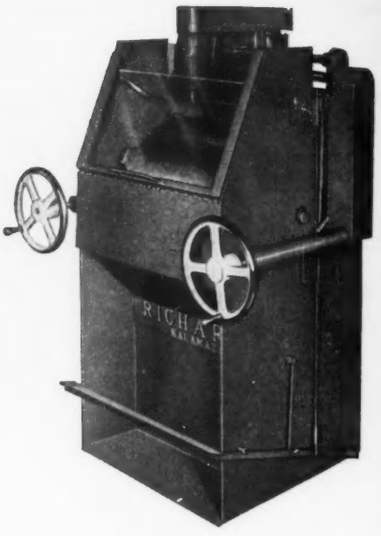

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Patents

For The GRAPHIC ARTS

Covering patents issued June 7, 14, 21 and 28.

All new patents for the Graphic Arts are reported exclusively for *Printing Equipment Engineer* by Invention, Inc., an industrial patent research organization in Washington, D. C. Invention, Inc., presently has the only staff in the country that examines, in the U. S. Patent Office, the complete printed copy, drawing by drawing and page by page, every one of the several hundred new patents issued each week. *Printing Equipment Engineer* is the only trade publication in its field offering a report based on this complete coverage. For copies of the patents listed here specify the patent numbers and send 25c for each separate patent, or 10c for each trade mark or design patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Composing Room Equipment:

PHOTOGRAPHIC LETTER LAYING-OUT DEVICE

A simple device for reproducing rows of accurately spaced characters on a strip of sensitized film or material, without the need of complicated alignment machinery, is featured. It prevents the necessity of discarding an entire layout sheet because of single errors, and features economy of construction and operation. Patent 2,709,952 by Ira E. Brock.

DEVICE FOR SIMULTANEOUSLY KNURLING AND STRAIGHTENING LEADS AND SLUGS

The device is used on leads and slugs to prevent work-ups in printing forms. The front edge confining element of the device constitutes a resilient blade or leaf adapted to be adjustably positioned to vary the straightening pressure of the blade. Patent 2,711,108 by John A. Smith.

ARTICLE OF MANUFACTURE FOR PREVENTING PRINTING WORK-UPS

The article is similar to that covered by patent No. 2,711,108 and is made of ductile material capable of being deformed so as to produce uniform pressure over high areas of printing elements locked in a form. Patent 2,711,131 by John A. Smith.

Binding, Cutting, Perforating:

RECIPROCATING FEEDING MECHANISM

The mechanism functions to perform removal of unbound books one at a time from a hopper, squaring up of sheets composing the book, orienting of the book with respect to the path of a conveyor on a gluing machine, and feeding of the book on to the conveyor at same speed as that of the conveyor. Patent 2,711,245 by Harry William Taylor, assigned to Smyth-Horne Ltd.

BOOK SEWING MACHINE

Side-stitched books are manufactured from folded and closed signatures by this machine which utilizes two bobbins to furnish the stitching threads without the use of shuttles. The books are conveyed in spaced relation to each other and connected by the threads. A feeler mechanism actuated by the books severs the connecting thread. Patent 2,711,703 by Benjamin Duby, assigned to H. Wolff Book Mfg. Co., Inc.

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Feeding, Folding, Delivery:

AUTOMATIC MULTIPLE PAPER-FOLDING MACHINE

This machine will take half-folded newspapers as fast as they are delivered by the printing press and will fold them accurately and dependably into quarter-size. It will also fold a plurality of different newspapers at one time without mixing or intermingling them. Patent 2,711,317 by James F. Maupin, assigned one-third to Arthur N. Klein.

SIGNATURE GATHERING MACHINES

The object of this invention is to afford a flatwise gathering machine of the rotary type which operates at top speed, is durable and reliably accurate, and possesses highly efficient detection and correction of defects. Patent 2,711,896 by Paul E. Kleineberg and Pierre Lariviere, assigned to T. W. and C. B. Sheridan Co. (The Sheridan Iron Works).

FEEDING MACHINE

A feeder-gatherer of the type used for assembly in mass production of books, magazines, etc.; will perform all the functions of prior feeders and gatherers at much higher speed, with less supervision, less error, and upon a wide variety of materials while providing quick and easy adjustment. Patent 2,711,897 by Sigwald C. Grunlee.

Miscellaneous:

SLIDE-RULE

The rule is designed for determining running picas per copy, in calculating cost of setting a copy in machine hours or man hours, the number of lines required for setting a copy with characters of a special size, etc. Patent 2,710,143 by Fred W. Hoch.

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Platemaking:

CARRIAGE AND HOLDING MEANS FOR PRINTING PLATE SHAVERS

For making plates of various widths and thicknesses, this device consists of a supporting bed and adjustable plate holder for a shaving mechanism which permits quick adjustment for obtaining the desired plates. Patent 2,710,564 by Wayne E. Price.

COLOR REPRODUCTION

This invention comprises a color reproduction mask or set of masks for use in scanning colored printing copy. It increases fidelity of color reproduction in printing plates, reduces costs, and predetermines printing density of each ink involved, plus many other related provisions. Patent 2,710,889 by Philip E. Tobias, assigned to Edward Stern & Company, Inc.

APPARATUS FOR BEVELING PRINTING PLATES

Various sizes of rigid, laminated printing plates are so supported that they may be beveled without adjusting the positions of the plates. This is accomplished by providing ready adjustment of the beveling tools with relation to the plates. Patent 2,711,004 by Harry W. Faeber, assigned to Time, Incorporated.

PHOTOMECHANICAL PROCESSES

Invention relates to production of positives, etc., directly from fine line originals by reversal technique, and is applicable to four-color reproduction, by repeating the procedure for color-separation screen positives made from the original. Patent 2,711,372 by Donald Charles Gresham, assigned to McCorquodale & Co. Ltd.

PROCESS FOR THE PRODUCTION OF PHOTOGRAPHIC REPRODUCTION SURFACES ON ALUMINUM AND ITS ALLOYS

A photographic reproduction sheet which is suitable, using a physical developer, for the production of black and white reproductions, for example cards, signs, incombustible documents, and the like, is claimed. Patent 2,710,804 by Max Schenk, assigned to Dr. von Gluts & Buller Aktiengesellschaft.

LITHOGRAPHIC STEP AND REPEAT SYSTEM

For making a series of prints upon a sensitized press plate or film from a single negative, this system uses dowels spaced apart precise distances so as to insure that the step-by-step succession of movements required will effect exact registration. Patent 2,711,031 by Harry C. Kessler, Jr.

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Printing Presses:

STAPLING MECHANISM

The mechanism is adapted for high speed operations in rotary web printing machines and uses a staple-holding cylinder in place of the staple-forming horn. The device is capable of being set to effect stapling for collect and non-collect runs. Patent 2,709,808 by John Thomas Murrell and John Alfred Gladden, assigned to R. W. Crabtree & Sons Ltd.

DETECTING DEVICE FOR MACHINES WORKING ON SHEETS

The device can be used on printing machines and gives an automatic signal and setting to prevent improperly positioned sheets from passing into the machine. The feelers are arranged underneath the sheets to be controlled with co-operating members above driven in timed relation. Patent 2,709,960 by Hans Alix and Wilhelm Winkler, assigned to Faber & Schleicher Aktiengesellschaft.

APPARATUS FOR POSITIONING PRINTING PLATES ON ROTARY PRINTING CYLINDERS

Invention provides for accurately mounting printing plates upon printing cylinders, avoids necessity for subsequent plate adjustment after initial positioning, and also avoids necessity for provision of guide lines on printing cylinders, or use of overlay sheets, optical transfer systems or necessity for making rule measurements. Patent 2,711,691 by William B. Leavens, Jr.

WEB TENSION CONTROL SYSTEM

For use in web-fed printing presses, the system is of the type wherein the tension in the web as it is unwound from a roll is independent of the tension thereafter, and wherein the tension on the web as it is wound upon a roll is independent of the tension in the web prior to the winding step. Patent 2,710,153 by William Baumrucker, Jr., and Clarence M. Flint, assigned to Research Corporation.

WEB TENSION CONTROL SYSTEM

Applicable to web printing machines, the system includes a device actuated by variation in slack in the web to vary the speed of the web roll drive to maintain the slack within a predetermined range. Patent 2,710,154 by William Baumrucker, Jr., and Clarence M. Flint, assigned to Research Corporation.

METHOD FOR PRINTING AND COATING

For gravure and intaglio printing, this method conserves on the use of ink and provides a more uniform distribution of the ink on an engraved printing cylinder by heating the ink before it is applied and then cooling it rapidly after its application to the cylinder. Patent 2,711,132 by John Viscardi, assigned to Viscardi Corporation.

CURVED PLATEN PRESS

The press is of the type wherein the face of one member of the printing couple, ordinarily the platen member, is con-

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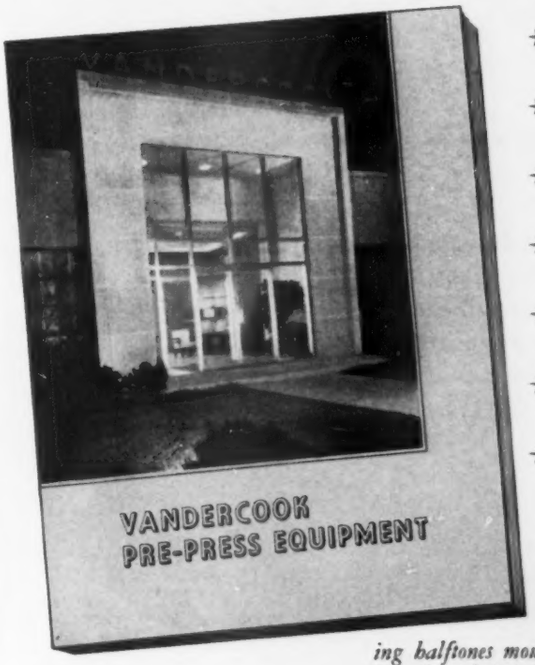

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VANDERCOOK Minimum Makeready System

vexly curved on an arc of comparatively large radius about an axis transverse to direction of relative movement between the member and the bed member of the press. Patent 2,711,692 by Charles F. Root, assigned to The Chandler & Price Co.

BELOW CENTER OF FORM ROLLER AUXILIARY DISTRIBUTOR ROLLER

For use in printing presses of the reciprocating flat bed type, this roller is disposed between the bed of the press and the axis of the form roller. This auxiliary roller tends to eliminate "ghosts" and "shadows" which commonly occur in printing with this type of press. Patent 2,711,693 by William T. Daniels.

BALL BEARING MOUNTING FOR FORM ROLLERS

The bearing is for use with a printing press roll assembly. The assembly provides for separately mounting the ball bearings upon the roll shaft so that the bearings are readily removable when it is necessary to replace a roll cover. Patent 2,711,937 by Willard M. Pollock, assigned to American Type Founders, Inc.

PATENT SEARCHES

For Patent Research in the U.S. Patent Office, or a prompt estimate on any type of search, write

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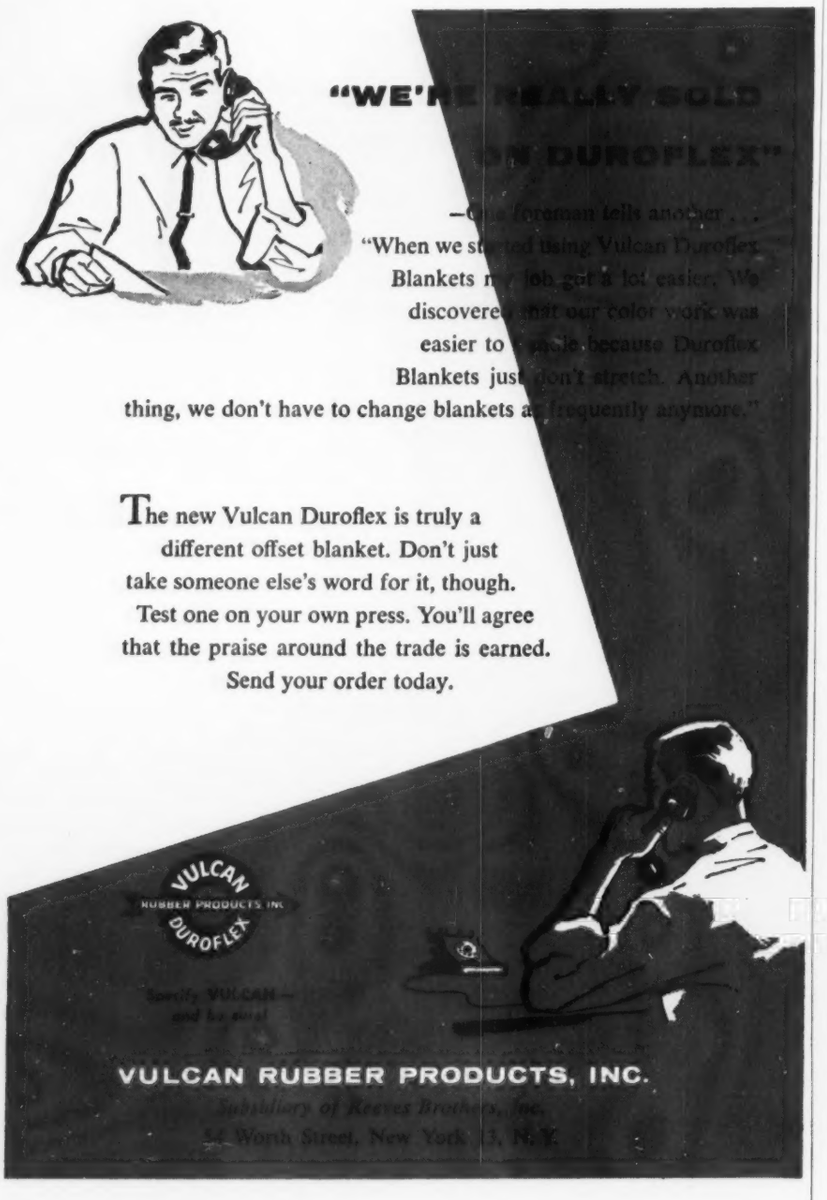
ELIMINATING INK MIST OR OTHER DETRITUS FROM ROOMS

Pressrooms of printing plants are maintained free from ink mist, etc., by enclosing and maintaining at slight negative pressure the space in which the ink mist is generated, whereby flow of air from enclosed space to the pressroom is prevented. Patent 2,710,574 by Harleston E. Runion.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NEWS ITEMS

Morris Named Administrative Assistant—Harry E. Gould, president of Reinhold-Gould, Inc. and Aldine Paper Co., recently named Charles V. Morris as his administrative assistant. This past year Morris was a member of the board of gov-

MORRIS

ernors of the Intl. Assoc. of Printing House Craftsmen, and chairman of its public relations commission. He is chairman of the printing for commerce clinics staged by the American Institute of Graphic Arts and chairman of the Circles of Information of the Direct Mail Advertising Assoc. Morris is a well known author of several books concerning the Graphic Arts.

Hogan is Dead—Russell J. Hogan, past president of Club of Printing House Craftsmen of New York, Inc.; past president of the Intl. Assoc. of Printing House Craftsmen, and vice president of Hugues Corporation, died August 4, 1955.

Bingham's Pittsburgh Manager—Elmer L. Johnson was recently appointed manager of the Pittsburgh, Pa., factory of Sam'l Bingham's Son Mfg. Co. as announced by W. J. Hunt, president of the company. Johnson has been a salesman with the Bingham factory in Indianapolis for the past five years. He is a member of the Printing House Craftsmen.

JOHNSON

New Hoe Plant—J. L. Auer, President of R. Hoe & Co., Inc., announces the opening of a new Pacific Coast saw manufacturing plant at 2700 S. E. Tacoma Ave., Portland, Ore. Situated on a three acre site, the new plant is provided with 30,000 sq. ft. of floor space. An elaborate system of conveyors, hoists, etc., has been installed in the new plant to facilitate materials handling.

Paasche Merges with Cline—In a joint statement made by Warren P. Scott, president of Cline Electric Mfg. Co., and J. A. Paasche, president of Paasche Airbrush Co., it was announced that the Paasche

Company has merged its interests with Cline. The Paasche organization will be known as the Paasche Airbrush Company, Division of Cline Electric Mfg. Co. Additional Paasche officers have been appointed, with Walter G. Earle as executive vice president and Paul A. Benke as vice president and assistant general manager. The new board of directors consists of Warren P. Scott, chairman, and Walter G. Earle, Paul A. Benke, J. A. Paasche and Russell Baker.

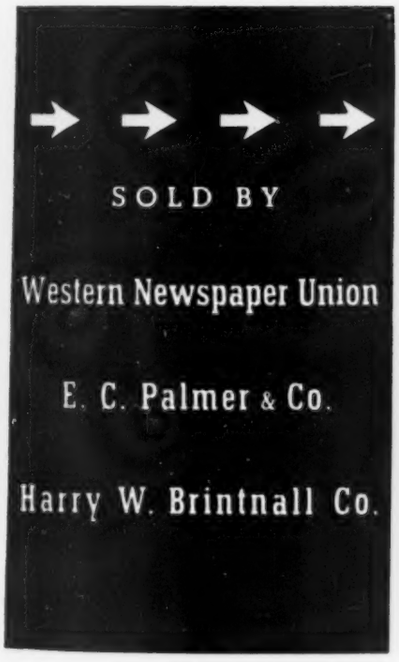
Hoe Appoints Fritschi — J. L. Auer, president of R. Hoe & Co., Inc., announced the appointment of Charles Fritschi as manager of the stereotype and electrotype department. In addition to nearly 20 years of service in this country, Fritschi has worked in the printing industry in Canada, England and the Netherlands. More recently he has been connected with the Stereotex Machinery Co.

FRITSCHI

Franklin Purchased by Fetter—It has recently been announced that Fetter Printing Co. has purchased all outstanding stock of Franklin Printing Co. which will be continued as a separate operation in its present location in Louisville, Ky., according to Harold W. Braun, president of Fetter. At a meeting of the new board of directors of Franklin, John T. Weber was elected president and general manager of Franklin. Miss Constance Sheltman is the new vice president and Miss Myra Mae Durbin the secretary and treasurer. George G. Fetter, jr. and Harold W. Braun, with the officers, comprise the new board of directors. Weber had been assistant to the president of Fetter, coming there from Cummins Engineer Co., Inc., Columbus, Ind. Miss Sheltman is a daughter of the founder of Franklin and has been active in the management of the company since her father's death. Miss Durbin has held the position of treasurer of Fetter since 1939.

Battelle Executive Team—Three vice presidential appointments at Battelle Institute were announced by Dr. Clyde Williams, Institute president and director. Named were Dr. B. D. Thomas, David C. Minton, jr., and John S. Crout. All three have been associate directors of the research organization, and, along with Dr. Williams, comprise the key policy making and executive team in Battelle management. In addition to his appointment, Thomas is secretary to the Battelle board of trustees and currently is executive in charge of the Institute's European operations. Minton also has primary responsibility for the Institute's relations with industrial and governmental clients. Crout in addition is currently executive in charge of personnel and public relations policies. He also heads the Battelle Development Corp.

THOMAS MINTON CROUT



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Changes at Turner — Turner Printing Machinery, Inc. recently announced several changes. The board of directors elected Irwin S. Wertheimer president, succeeding his father, Joseph Wertheimer. Joseph Wertheimer will assume the duties of chairman of the board. Other plans under way are to afford facilities for demonstrating and displaying equipment in Turner's Cleveland plant, to obtain storage and warehousing facilities in Toledo, O., and to enlarge the sales staff and sales territory. In line with these plans, Leonard Bierut, of the advertising department, has been transferred to the sales staff, and the Cleveland finance department has been transferred to the Chicago office. Dan Fisher, executive vice president, also announces that plans are being developed to open a branch in New York, N. Y., this fall, to be headed by P. Herbert Pasch, former Cleveland sales manager.

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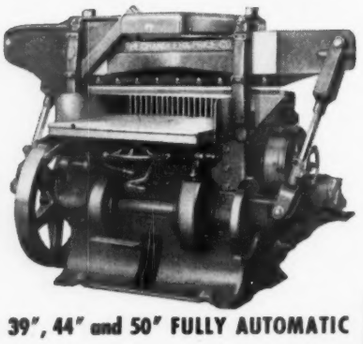

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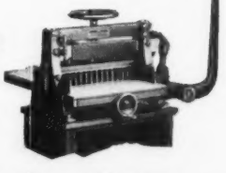

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PIA Membership Grows—An all time high membership of 477 with the addition of 20 new firms in Printing Industries Assoc., Inc., of Los Angeles, has been announced by Henry Henneberg, PIA general manager. New members who recently joined include Kal Tobe Press, Lithographic Arts Inc., Cinema Center Printers, Hendricks Printing Co., Crestline Thermogravers, S & G Bindery, Colby Poster Printing Co., Greene's Stationery, Mac Arthur Press, Standard Forms Co., Copy Cat Advertising, Mark Bindery, American Sample Co., Inc., Accurate Bindery Co., Pearl Clark Bindery, Printcraft, Westside Bindery, Inglewood Book & Stationery Co., Geddes Press and Baughman Printing Co.

John B. Plunkett, former manager of the company's flexographic ink control laboratory, has been appointed to the executive staff of Bensing Bros. & Deeney. In his capacity as director of quality control and purchases, Plunkett will have responsibility for controlling quality of flexographic ink made by the company's Philadelphia plant. Plunkett is a charter member and past president of the Philadelphia Inkmakers Production Club.

PLUNKETT

Wood Announces Promotions—Three promotions in executive personnel of Alan Wood Steel Co. were announced by Harleston R. Wood, president. Perry L. Francis, formerly vice president in charge of sales, was elected vice president in charge of marketing. In his new position Francis will supervise all the company's marketing activities. William E. Boger, formerly general superintendent, was elected vice president in charge of operations. Boger has been associated with the company since 1950. Howard W. Read, formerly comptroller and assistant treasurer, was elected vice president and comptroller. Read will be in charge of all planning and development activities of the company.

Miller Representatives Named—A. E. Searle, jr., vice president and Eastern Division manager of Miller Printing Machinery Co. has announced the appointment of J. F. Sydlansky as Miller representative in the New York area. F. G. Betlock, vice president and Western Division manager of Miller announced the appointment of H. M. Altemeier as Miller representative in the Cleveland and Detroit area. Both men have had a number of years' experience in sales work.

SYDLANSKY ALTEMEIER

Cowan Pressroom Products, Inc. this month celebrates its fortieth anniversary. The business history of the company, established by the late Park W. Cowan, dates from the 1915 Panama-Pacific Intl. Exposition in San Francisco where the company's first product was seen by printers. Originally known as the Morgan Expansion Roller Truck Co., the business was incorporated in 1946 and the firm name changed. Since that time, Amy Williams has been president.

ADKINS

Supplier Representative—Charles D. Adkins has established offices in Chicago to represent suppliers for the Graphic Arts industries. His headquarters will be 59 E. Van Buren St. He will act as manufacturers' representative for the J. M. Huber Corp. Ink Div. among other accounts.

Reid Announces Changes—J. W. Reid, vice president in charge of sales for Mergenthaler Linotype Co., recently announced that William J. Fraher, production engineer, has been assigned the eastern Pennsylvania territory, and Henry L. Murphy, production engineer, has been assigned to the Boston Agency. Murphy's territory includes Maine, New Hampshire and Vermont, with the exception of Bennington County. In addition, he will cover Essex and Middlesex Counties in Massachusetts. Murphy has been associated with the Pawtucket (R.I.) *Times*, New Haven (Conn.) *Register*, The Providence (R.I.) *Journal* and the Attleboro (Mass.) *Sun*. Fraher attended Brooklyn College.

Equipment & Supplies

(Continued from Page 20)

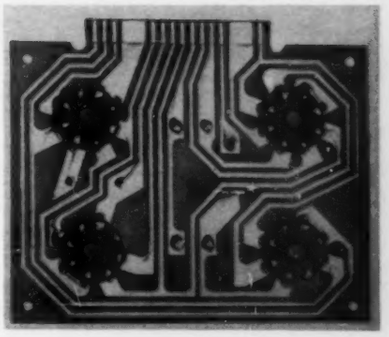
characters of the keyboard is 14 pt. Changes in size from 5 pt. to 42 pt. is accomplished by shifting the lens arrangement. Type faces available include Century Old, Century Old Italic, Gothic and Bulletin Typewriter. Change of type style is accomplished by changing the keyboard. The machine is not motor driven and the time required to change the keyboard is about 1 min., says the sponsor. Normal, wide or condensed type faces can be produced by altering the lens system. Italic faces are not obtained from the normal faces. Line justification is not possible on this machine. Please mention PEE No. 539 when requesting more information.

Galtork Pin Wrench

As an aid to decrease down time, Frank M. Galvin, Inc., announces the Galtork Pin Wrench for patent base or rotary cylinders. The Galtork is a miniature Torque wrench pre-set to the amount of pressure required to hold the catch tight against the edge of the plate. After the catch is tightened to the right amount of pressure, the wrench ratchet slips to prevent excessive pressure. Sponsor states the wrench provides a savings in damaged or broken catches and pins and that it also prevents damage to the edges of the electrotypes. For further details, please mention PEE No. 567 in your request.

Electrically Controlled Quadder

The new Linotype electrically controlled Hydraquadder, manufactured by Mergenthaler Linotype Co., incorporates developments in electronics and automation. The printed circuit is used in the memory control box which receives, stores and transfers signals from the push buttons or perforated tape. The electrical circuit is printed on un-



Dependable Daily Events!

TINGUE'S trouble-free Printing Press Blankets provide pressmen with **well-printed** runs, day in and day out. Time **can** be beaten on "railroaded news"—with this greatest group of smooth-operating press packing offered today. Gauges range from .012" to .120", to meet any press condition.

COMBINO—An extremely durable clean printing laminated blanket. Gauges .062", .072", .083", .093".

TOP-DRAWSHEET—is firm, durable, economical and of long life. Gauges .016", .025", .030".

CUSHION CORK*—A highly resilient underpacking. Gauges .055" to .085".

TINGUCORK*—Much firmer than "CUSHION CORK" and preferred where precision plates are available. Gauges .032", .055", to .086".

FOUNDATION—A firm, durable oil-proof underpacking laminated by du Pont with "Neoprene." Gauges .032", .040", .050" to .085" .120".

Tingue Coated Felt—Uncoated Wool Felt—Gold Tympan Drawsheet—Improved Satisfaction—Sterling—Korker Under Blanket.

COATED TYMPAN PAPER—The coating by The Carborundum Co. gives better register and measurable savings in down time on runs over 50,000.

TINGULOK—This great new "clipper lacing" method is the simplest system for blanketing rotary newspaper presses.

TINGUE PRINTING PRESS BLANKETS

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1765 Carter Avenue, New York 57, N. Y., CYpress 9-8800

CANADIAN SALES AGENTS **ROSS WHITEHEAD & CO. LTD.** MONTREAL, CANADA

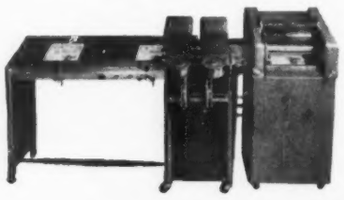
breakable plastic board, and four interchangeable relays plug in to socket connections. The Hydraquadder permits repeat quadding automatically. In tape operation a quadding position can be repeated continuously without a taped signal by depressing both the regular button and the button for desired quadding function. For further details, please mention PEE No. 545 in your request.

Roll Leaf

A new roll leaf has been developed by General Roll Leaf Mfg. Co. Designated Lustralum, the aluminum foil provides brilliance and fine definition, states sponsor. Excellent workability and superior coverage are also claimed by the manufacturer. For further details, please mention PEE No. 561 in your request.

Jogging, Stitching, Folding Machine

The Binder-Matic, developed and manufactured by the J. C. Mendes Corp., in-



corporates jogging, stitching and folding operations in one machine. The Binder-Matic is equipped to handle up to 16 pages of pre-gathered sheets at a time and to produce finished booklets up to 64 pages. Speeds up to 3000 units per hr., and the handling of different colored sheets and varied weight cover stock are featured. In the stitching operation two wire staples from a wire spool are inserted. The sheets or booklets are then folded in half and stacked on a delivery conveyor. The jogger, folder or stitcher can be operated independently of each other. For further details, please mention PEE No. 547 in your request.

Box Truck

The open side box truck is one of the styles available from Wilder Mfg. Co., Inc.

In the All Purpose Truck line sixteen different styles are manufactured. Included in the line are platform, bin, table and shelf trucks. Each of the sixteen styles is available in four different sizes. For further information, please mention PEE No. 560 in your request.

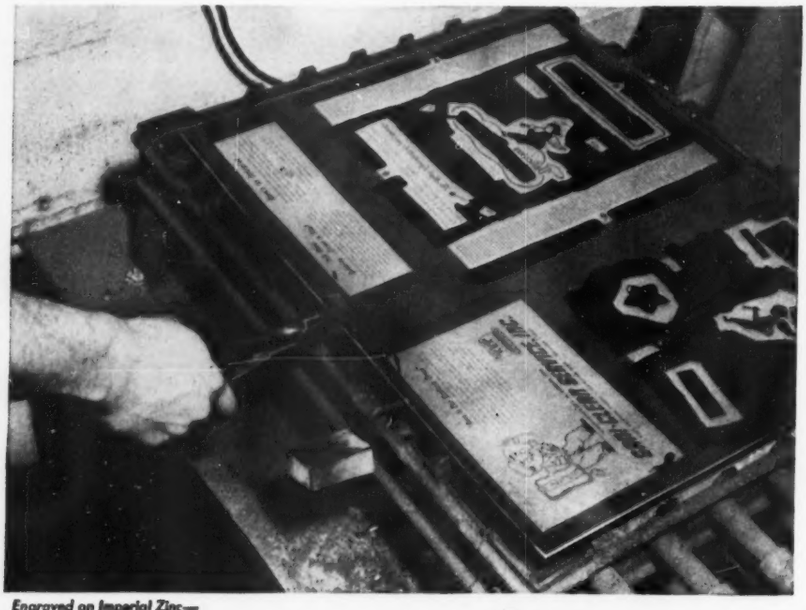
Glue Gun

For the application of glues, adhesives, cements, pastes and gums, the FF Glue Gun has been developed by the John P. Fox Co.

The glue gun is operated with air pressure through internal valves for carton sealing, paper converting, stencil gluing sheets and other operations. The gun is built in varied sizes for surface, edging, small joint assemblies; special contours and shapes also available. Pressure equipment of 1 gal., 2½ gal. and 5 gal. capacities are offered in conjunction with the FF Glue Guns. For further details, please mention PEE No. 558 in your request.

Nolan Metal Remelter

A metal remelter for melting of alloys that melt below 1000 deg. F. has been developed by the Nolan Corporation. The crucible and the exterior housing of the remelter are rectangular. Furnace is charged from the top through an insulated hinged



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Burn in Your Flats Without Buckling

Imperial Zinc

For clean bottoms and great resistance to buckling, etchers appreciate Imperial Duraplate.

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Meets the requirements for all usual applications.

Imperial
DURAPLATE
(Orange Redibak)
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All SR Models with or without packer use jute, sisal or cotton twine . . . makes tight secure tie with one wrap and non-slip bow knot . . . ties various size stacked or rolled bundles without adjustment . . . Model SR1C illustrated especially adapted to conveyor systems for full AUTOMATIC operation . . . Small motor and hand operated models for tying single papers for home delivery available . . . Machines fully guaranteed . . . over 30 models to choose from.

LITERATURE ON REQUEST

NATIONAL BUNDLE TYER CO.

BLISSFIELD, MICHIGAN

Little chance for praise but plenty for blame

When people admire a paper's looks they say, "excellent typography" or "fine press work." Rarely if ever do they talk about the expert stereotyping that was necessary before two other crafts could be praised . . . So the stereotyper's best possible score is par. Help him to maintain it by dependable Certified Mats.

For dependable stereotyping, rely on Certified Mats

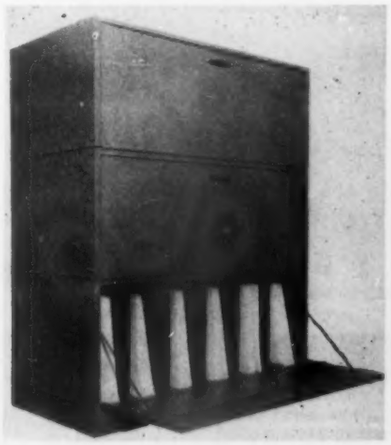
Certified DRY MATS

CERTIFIED DRY MAT CORPORATION, 555 Fifth Avenue, Dept. M, New York 17, N. Y.

cover. Pot capacity of the remelter ranges from 600 lbs. to 10,000 lbs. Sponsor states a feature of the Nolan Remelter is a drip proof, bottom pouring valve seated within the pot to allow for expansion and contraction. The self lapping valve is located inside the crucible so that subject to maximum temperatures at all times. The remelter is provided with a low cover hood which is said to reduce metal loss by retarding metal oxidation and reducing furnace heat loss. The Nolan Remelter is operated on gas, electricity or oil. Though melting time depends on type of heat used, the unit requires about two hours to melt a full pot from a cold start, states sponsor. Recovery time for additional loads is one hour. A ventilating pipe attached to top of hood allows metal and combustion gases to escape. For further details, please mention PEE No. 566 in your request.

Offset Plate Filing

Colwell Litho Products, Inc., announced the production of a system for filing offset plates. The Colight System employs 12 in. by 18 in. envelopes for holding 10 in. by 16 in. plates, negatives, and art work. Envelopes are filed in cabinets holding over 250 jobs per cabinet. Construction is of 20 ga. cold rolled steel with baked on gray crinkle enamel. Designed to be stacked in units of four, dimensions of each unit are 13 in. by 36 in. by 19 in. A printed job ticket form on the envelope gives the user all the information necessary pertaining to the enclosed job. For further details, please mention PEE No. 554 in your request.



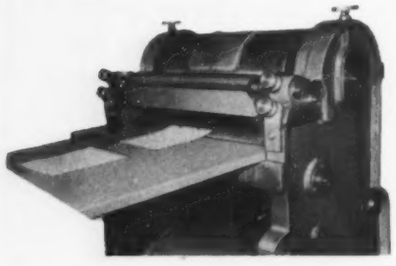
V-Belt Motor Drive

A V-Belt Motor Drive is now available as optional equipment on all new Linotypes or for application to machines now in use. The drive, manufactured by Mergenthaler Linotype Co., is used in conjunction with a standard ½ h.p. electric motor. With the V-Belt Motor Drive variable speed or any one of four fixed speeds, 6⅔, 8, 10 or 12 lines per min. can be obtained. A variable Speed V-Belt Drive attachment enables operator to vary machine speeds from 7

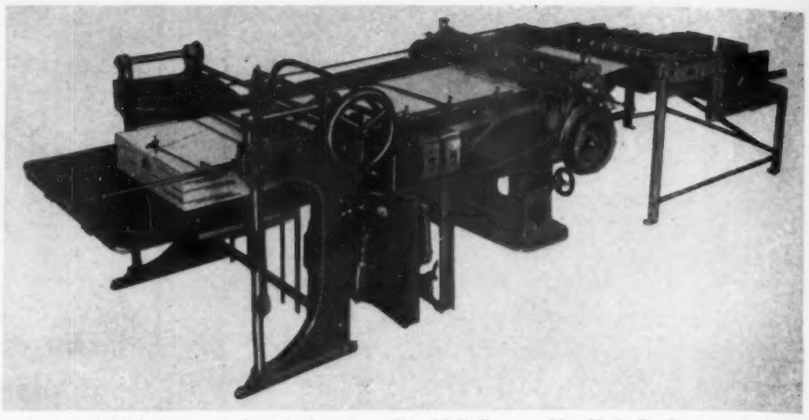
through 12 lines per min. Speeds are changed while machine is running by moving a camming lever, calibrated for relative machine speeds. For further details, please mention PEE No. 559 in your request.

Sheet Fed Flexographic Press

The Flexmaster, a flexographic press recently developed by The Harley Co., serves as a proof press for samples, testing of inks, plates and stocks, and can also be used for short runs and imprinting jobs such as the printing of grocery bags, throw-aways, cloth linings and folding cartons. Max. sheet size is 18 in. by 12 in. The Flexmaster is equipped with a variable speed drive with speeds up to 5000 per hr. Press operates on 110 v. single ph., 60 cy. electrical supply. Though the Flexmaster is hand fed, Harley states an automatic feed will be added at a later date. Construction is of heavy castings and machined and ground parts throughout. Inking unit consists of



two rollers with adjustments for controlling amount of ink. If a sheet does not go through, the plate cylinder automatically is released away from the inking rollers and impression cylinder. Stock is held by grippers throughout printing operation. For further details, please mention PEE No. 553 in your request.



Nygren-Dahly Rotary Slot Perforator—The N-D Rotary Slot Hole Perforator has been announced by Nygren-Dahly Co. The machine is designed primarily for use with pile feeders and lay-boy joggers. In addition to perforating, the machine can be used in the production of scoring and slitting. Scoring heads for any purpose can be furnished. The machine will fit into present N-D Automatic Perforating units, and is offered in 30 in., 36 in., 42 in. and 45 in. sizes. A model for hand feeding is also available. For further details, please mention PEE No. 543 in your request.

Perforating Attachment

Cowan Pressroom Products, Inc. has added an attachment for the Heidelberg Cylinder press to its line of Cowan Ball Bearing Perforators. Perforations are made the length of the sheet which is held by grippers. The operation is done against steel bands fastened around the cylinder. Perforating Discs are available with two, three and four perforations to the inch for snap-out work; with six, eight and twelve perforations to the inch for regular jobs. Slitting and Scoring Discs may be used on the same bar. For further details, please mention PEE No. 544 in your request.

Paper Splicing Adhesive

An industrial paper splicing adhesive in dry film form was designed by Permacel Tape Corp. primarily for splicing coated and filled papers. Permacel 185 is 0.001 in. thermoplastic unsupported adhesive film

cut metal melting costs
with a 'SURFACE' furnace
SAVE TIME. Melts 5,000 lbs. of lead in only 2 hours. Bottom outlet with casting trough, easily swung through large arc, facilitates pig casting. SAVE SPACE. Hood doors, bottom outlet and valve handles can be positioned conveniently no matter where the furnace is to be placed. SAVE FUEL. Simple-adjusting 'Surface' burners insure complete combustion, maximum efficiency.
Pick the right furnace for your production requirements from 5 sizes with capacities of 100-5,000 lbs. They use natural gas, manufactured gas, or LP gas. Temperatures up to 1200F.
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GET CLEAR, SHARP PROOFS . . . FASTER
NOLAN PERFECTION PROOF PRESS

The Perfection's packed cylinder and automatic grippers assure quick, easy operation . . . clean, sharp proofs. It's the ideal machine for checking forms . . . for pre-makeready . . . and it will handle forms in chases or galleys up to 17½" x 25½".

The "Perfection" Proof Press is ruggedly built with an extra heavy precision ground bed. It will give long efficient service . . . top quality proofs . . . at lowest possible cost.

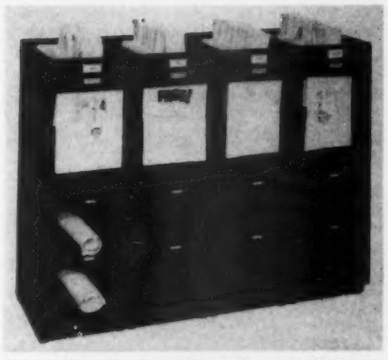
Write today for complete information on the Nolan Perfection Proof Press to:

NOLAN Corporation ROME, NEW YORK

supplied on a removable paper interliner. It is a continuous film which provides a uniform layer at the glueline and a splice with heat resistance, states sponsor. Permacel 185 is blue in color for visibility. After application of heat, the color disappears. A uniform heat of 375 deg. F. to 425 deg. F., pressure of 10 p.s.i., and 10 sec. dwell time are required for application. For further details, please mention PEE No. 548 in your request.

Kwik-Kopy Indi-Kator

Harry E. Lucas, sales manager of Kwik-Kopy Div., LaFave Mfg. Co., has announced a steel cabinet unit system for filing advertising copy in newspaper composing rooms. The system may also be used for corrected editorial matter. The cabinet units, 16 in. wide, 48 in. high and 24¾ in. deep, with toe clearance at bottom, are jig drilled for side by side grouping. According to the number required, the cabinets may be arranged in any advantageous fashion where floor space is at a premium.



View showing four Kwik-Kopy Indi-Kator units arranged side by side. As will be seen, the units are open top open front style. Advertising copy and/or proofs are suspended on a breakable steel rod and the open space below permits neat filing and accessibility.

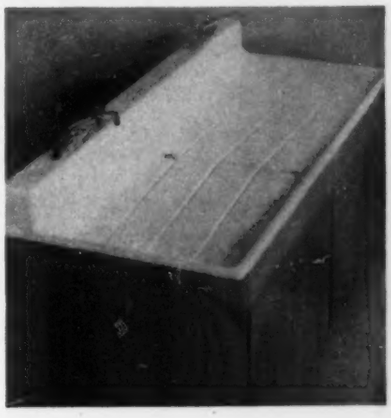
Close-up of Kwik-Kopy Indi-Kator showing how any piece of copy may be located quickly and removed from the filing rod. The wanted piece is slid on the rod until it is adjacent to the breakable rear section which is then lifted up and the copy removed. Copy may be restored to its original position if desired.

The open top and open front steel cabinet unit is arranged so that all advertising copy may be filed on a rod in the top of the cabinet. The hinged rod is provided with a breakable joint in the center to provide easy access to any piece of copy in the file. Any piece of copy is accessible by first locating the item wanted, then sliding it to the breakable rod joint. In this way, the smallest piece of copy can be removed from the file without disturbing the filing sequence of other copy on the rod. Manufacturer states no change is required in the present ticket system which might be in use. Each rod holds up to 300 pieces of copy.

The open front compartmented cabinet permits hanging large pieces of copy in orderly fashion. The two lower compartments may be used for storage of current week's copy and proofs. It is recommended that for composing rooms of newspapers of sizable circulation that six units (one for each week day) be used. Also, extra cabinets for special supplement use. For further details, please mention PEE No. 538 in your request.

Platemakers Cabinet Sink

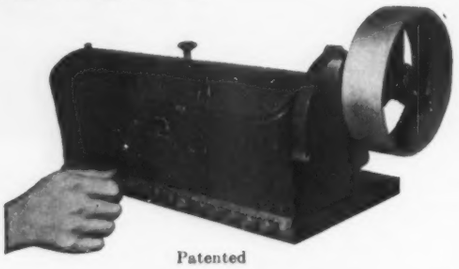
One piece sinks molded of Fiberglas reinforced plastic for platemakers have been announced by the manufacturer, Kay Dee



Why More Newspapers are Using CAPCO Portable Ink Fountains for ROP Color

Improved Capco PORTABLE INK FOUNTAIN

★ INCREASES PRODUCTION—affords **pressroom savings up 75%**
★ SAVES TIME of pressmen—no costly installations
★ Can be USED ON NEW OR OLD EQUIPMENT
★ Weight . . . Approx. 30 lbs.



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. . . TRIED, PROVED and GUARANTEED

Over 700 in use in over 200 newspapers!

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DESIGNED AND BUILT TO YOUR SPECIFICATIONS by GEORGE HANTSCHO

Over 25 years' experience designing & building presses

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GRAPHIC ARTS MACHINERY, INC.
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Mechanism of the Linotype and Intertype

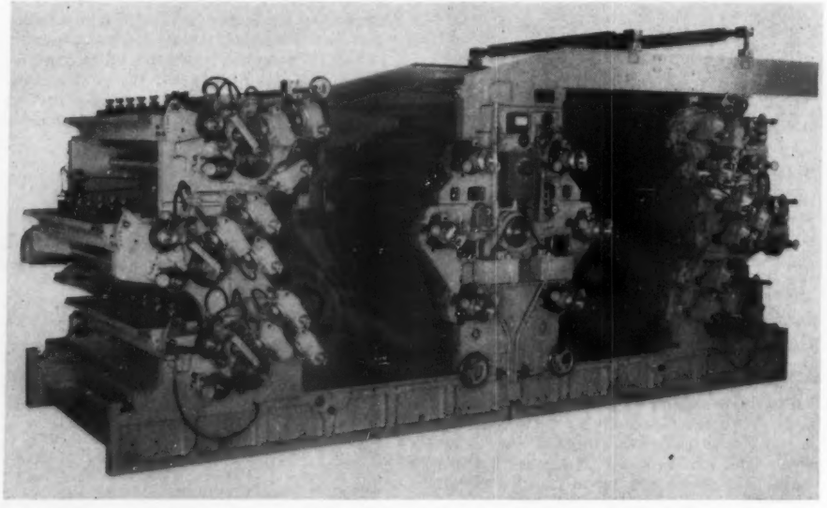
Written for Machinist-Operators, Machinists, Superintendents and Students

Technical operating knowledge of the Linotype and Intertype is available in the 14th edition of this 334 page book. Revised and amplified by Oscar R. Abel and Windsor A. Straw, the text includes 200 illustrations. Information has been added about late improvements in the machines. A practical and essential book for every composing room.

$5.15 per copy
Postpaid in U.S.A. only

PRINTING EQUIPMENT *Engineer*
1276 W. 3rd St., Cleveland 13, O.

Products. Ribs are formed into the bottom of the sink which provide added strength and drainage. A 5 in. wide back ledge is provided for mounting faucets and spray hose connections. Sink sizes of 5 in. deep, 30 in. wide and 72 in., 84 in. or 102 in. lengths are available. Colors are white, pastel green or pastel brown. Temperature controls of either automatic refrigerated or mixing valve types are available as built in accessories. A choice of wood or metal cabinet bases or stands is offered. The rubber-like resilience of the surface, states sponsor, helps prevent glass breakage. For further details, please mention PEE No. 540 in your request.



Six Color Letterpress-Press—Paper Converting Machine Co. has announced the development of a six color letterpress designed for use with rubber plates. Rated speed of the press is 700 ft. per min. Range in plate cylinder repeat sizes is 15 in. through 30 in. in ¼ in. steps. Maximum screen work from the rubber printing plates is 120 line. Press has been constructed to run from roll to roll to accommodate wrapping and carton equipment which operates from rolls of stock. Sheet feeding is possible at lower speeds. The machine is particularly designed for coated sulphite stock and similar materials. Either heat setting or moisture setting inks can be used. For further details, please mention PEE No. 546 in your request.

New Type Face

Bauer Alphabets, Inc. announced its latest type face, Fortune, a modern version of the Old Clarendon which was introduced

FORTUNE
LIGHT

FORTUNE
BOLD

FORTUNE
EXTRA BOLD

in the 1840's. Re-designing was under the supervision of Dr. Konrad F. Bauer, art director of the Bauersche Giesserei, Frankfurt/ Main. The Fortune will be available in light, bold and extra bold. Presently available in four sizes; 18 pt., 24 pt., 30 pt. and 36 pt., the size range of the three series will be from 8 pt. up to and including 84 pt. For further details, please mention PEE No. 557 in your request.

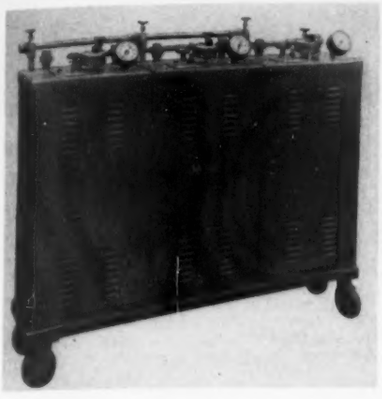
Gloss Inks

A new line of gloss inks has been introduced by J. M. Huber Corp. The inks, named Higlo, make possible printing on premium stocks and solid and corrugated containers. Sponsor states rub tests show that the new inks do not flake and will stand scuffing well whether single or overprinted. Sponsor also states Huber inks will trap either wet or dry over other Higlo inks

regardless of time elapsed from first down printing. For further details, please mention PEE No. 565 in your request.

Triple Temperature Control Unit

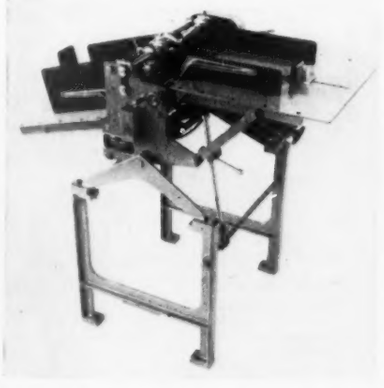
Sterling, Incorporated announces a triple temperature control unit, Sterlco Model 6031. The Sterlco Model 6030 was designed for use where three separate, automatically controlled temperatures between 60 deg. F. and 240 deg. F. are desired on the inking rolls of multi-color presses. The unit is portable and ready to operate when connected



to electricity, water and drain. Sponsor states operational features are adjustable and automatic heating control, low water capacity, high water velocity and modulating cooling control. For further details, please mention PEE No. 552 in your request.

Rotary Perforator

Pierce Specialized Equipment Co. announces an Automatic Feed Rotary Perforator. Manufacturer states the Perf-A-Matic is capable of handling any stock from tissue to cardboard; sheets from 3 in. by 4 in. up to 19 in. wide and 22 in. along the perforated length. Automatic feed is from



bottom of the pile. Feeding speeds are adjustable from 8000 to 16,000 lineal feet an hour by means of a variable feed drive. Motor is ¼ h.p., 110 v., 60 cy., A.C., single ph. with overload protection. Five thousand to 50,000 sheets per hr. are handled, based upon size and stock. Individually adjustable twin side guides on the feed table are provided. Heads and knives can be used for ⅛ in., ¼ in., ⅜ in., ½ in. perforations, scoring and slitting. Sheets are delivered into an adjustable tilt layboy in which are accommodated 5 in. stacks. Overall floor space required is 29 in. by 55 in. For further details, please mention PEE No. 563 in your request.

New "D-MOUNT"® Interchangeable Sleeves run true and concentric every time

Patent Pending

• "D-MOUNT" sleeves of varying diameters fit *single* universal "D-MOUNT" mandrel without use of adapters or set-screws

• "D-MOUNT" sleeves are made of lightweight alloy... easy to handle, store, ship

• Unique "D-MOUNT" system assures accurate, concentric assembly of sleeve and mandrel regardless of how often assembled and disassembled

Mosstype's revolutionary "D-MOUNT" interchangeable sleeves enable you to reduce costs and increase production without sacrificing printing quality. "D-MOUNTS" are available bare...with plates mounted in position...or with vulcanized all-over designs — in full range of printing circumferences. "D-MOUNT" mandrels are made to fit all presses.

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MOSSTYPE *2 modern plants to serve you*

33 Flatbush Ave. Brooklyn 17, N. Y.

150 Franklin Turnpike Waldwick, N. J.

A complete production service for converters and package printers everywhere

Gravure Clinic

(Continued from Page 30)

Process are the need for only one positive, from which any number of Rotofilm transparencies can be made by precision equipment, and controlled processing methods not possible with carbon tissue. The Rotofilm, being less sensitive to atmospheric changes after exposure and development than carbon tissue, can be shipped or stored without refrigeration and makes possible more uniform duplication of cylinders in the same plant as well as in other plants throughout the country . . . The Rotofilm is not confined in its use to only the Alco Process. Du Pont claims it can be used with News-Dultgen or conventional gravure."

The Henderson Process Outlined

Smiel then went on to describe a final gravure engraving method, the Henderson Process, which today is used to a limited degree in the making of cylinders for the packaging field. In this method a halftone positive is made and exposed in contact with an enameled cold top as used in letterpress. The whole process is purely letterpress except that the printing area or dot area is etched into the copper, and printing proceeds as in gravure from below the surface. Due to the inability of a cold top process to control the rate of etch from shadow to highlight as with carbon tissue or Rotofilm, the depth of etch is fairly uniform. The varying size and shape of the halftone dot is depended on to create variation in tone quality. Thus the Henderson Process is limited in scope to line work or at least to copy that does not call for a full tonal range.

Accurate register and ability to reproduce continuous patterns or designs around the cylinder are some of the advantages claimed for the Henderson Process.

Look at the Future

A look into the future of the gravure process concluded Smiel's talk. "In publication (gravure) there is a good possibility," he said, "that Rotofilm will replace carbon tissue in the preparation of cylinders. Duplicate exposed and developed Rotofilms can also eventually replace duplicate glass positives. Theoretically, this should help improve the uniformity of production from one publication to another, since any number of duplicate Rotofilms can be made from one master set of four-color positives.

"If ever a means for inserting etched printing plates into a gravure printing cylinder is invented, that would, of course, be the answer to many of our problems. That possibility appears to be remote at the moment. If it comes it will obviously affect our present press equipment and may even result in scrapping much of it. In the meantime, we can only look forward to further developments with electronic color correction methods, improved inks and papers, and higher speed printing with gravure presses."

The Rotogravure Press

Elmer G. Stacey, rotogravure sales manager, E. G. Staude Mfg. Co., St. Paul, Minn., likened the rotogravure printing press to "a highly refined wash tub wringer." That was in his speech, *Rotogravure—The Simple Precision Printing Process.*

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Stacey said the rotogravure printing press was like a wash tub wringer in that the basic action is a squeeze between two rollers. In the case of the wringer, both rollers are rubber. In the rotogravure press, the upper roller is the rubber impression cylinder. The lower roller is the engraved copper cylinder. Added to this basic printing unit in the press are such additional attachments as a trough for feeding ink and a piece of spring steel to wipe the excess ink from the engraved cylinder. Other refinements help speed drying. In toto the gravure press has fewer moving parts than a comparable letterpress unit.

A further feature of the rotogravure printing press beyond its simplicity is the precision with which it is constructed, Stacey said. Being an in-line method, gravure presses are built in exact parallel from beginning to end. Some idea of the precision required in the press can be gleaned from the fact that the dots on the engraved cylinders are measured in microns. The press must be built to take advantage of that precision held in the cylinders. Capitalizing further on parallel construction and precision of construction, all cylinders in the gravure press are driven off the same drive shaft. This arrangement assures that one unit will be synchronized with all other. But it also demands fine construction.

Only the engraved copper cylinder is driven in the gravure press; the upper rubber roller is not tied in directly with the press drive. The rubber roller thus is free to move up or down depending on the size of the engraved cylinder. This gives the circumferential range of the gravure press.

Inks for Gravure Printing

Gravure Inks, Kinds and Uses was the subject of Robert Griffith's talk. Griffith is a member of the Printing Ink Div., Interchemical Corporation. He began by outlining the general characteristics of gravure inks compared with letterpress inks. Letterpress inks have heavy body, are stable and require rollers for distribution. Gravure inks are thin in body, coloring and pigments about the same as for letterpress inks, and, though binders are different, the formulas of binders are coming closer together for the two types of inks all the time.

Beyond such general descriptions it is difficult to specify gravure inks in a general statement because the inks vary widely according to the application, Griffith maintained. The choice of thinner is up to the printer. The latter must decide, often by trial and error, which viscosity prints best on his job. The ink generally will come from the manufacturer at the heaviest viscosity possible.

Griffith took a quick look into the future when he said he didn't believe that much could be done with inks to further speed up gravure printing. Web speeds up to 2000 ft. per min. already are possible. But at such speeds the viscosity of the ink must be extremely low. At such speeds and under such conditions, there is always the possibility of throwing the ink. As the viscosity of ink is lowered, the total amount of solids in the ink also is lowered. In some cases, it is now nec-

A recent visitor to the Heidelberg press factory in Western Germany was Charles L. Ryder, publisher of the Cobleskill (N. Y.) *Times* and former president of both the National Editorial Assoc. and the New York Press Assoc. Ryder is shown watching one of the four color jobs used for printing *Heidelberg News*, which is published in 15 languages and sent to 120,000 printing shops in 81 countries throughout the world.

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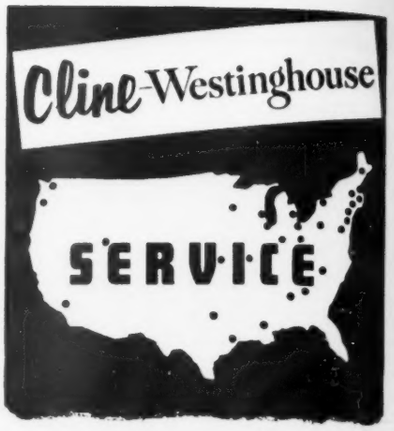

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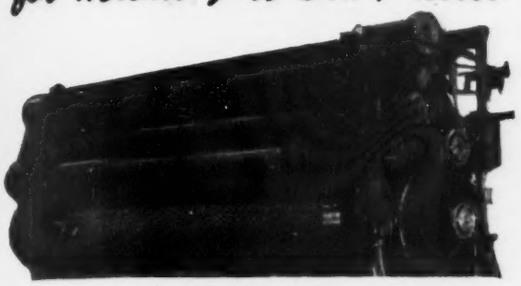

Western Printing Machinery's Extra Color Letterpress Unit for Miehle flat bed presses is the answer for low cost addition of third and fourth colors.

Precision built in several sizes, it will make a three or four color press of any standard 2-color Miehle flat bed. Production specifications are the same as the press to which it's permanently attached. Synchronization is perfect. Only minor changes are required for its installation.

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essary to apply two coats of ink when run at extremely high speed.

He did foresee, however, tougher ink binders which will improve the scuff and rough resistance of gravure inks, especially on rougher stock.

Gravure in the Publication Field

Besides the discussions of gravure equipment and techniques, participants at the Craftsmen's convention were interested to hear of *Gravure's Position in the Publication Field*. That was the subject of a talk by Allen C. Black, Crowell-Collier Publishing Co., Springfield, O.

After citing some of the "firsts" of gravure in the publication field and their impact on the industry, Black said: "Today there are more than 160 magazines using gravure having a combined circulation of more than 62 million copies.

"In addition to the magazines using gravure, there are 139 Sunday newspaper magazine sections whose combined circulation is well over 49 million copies.

"This gives us the grand total of more than 271 million copies each month using gravure, which will give you some idea of the number of readers, as well as the growth and acceptance of gravure, in the publication field today."

Then Black turned to his own firm, "Today, *Collier's* magazine is 100% gravure including the cover. *Woman's Home Companion* is 75% gravure and the *American* magazine 90% gravure.

"Our gravure printing equipment consists of 16 high speed presses or a total of 111 printing units.

"In addition to our high speed press equipment, we have three proving presses, or a total of 12 proving units and two presses of four units each for advertising and editorial reprints, adding up to a total of 132 gravure printing units now in operation in our plant."

As to the future, Black said: "Almost without exception, everyone in the gravure industry, whether engaged in producing gravure printing for magazines, newspapers, or packaging, is vitally interested in improving our process and our product.

"The formation of the Gravure Technical Assoc. in January of 1949 is a good example of that interest. Gravure Research, Inc., confines itself to research on gravure. While the benefits derived from such research has possibly not been all we had hoped for, the program has born some fruit. We are better informed on carbon tissue characteristics, etching solutions and methods, sensitizing procedures, and similar subjects of interest to all gravure plants . . .

"Our success in advancing the use of gravure in the publication field will only be limited if the people in the industry are satisfied to remain in their present position. I can assure you I see no indication of this trend. On the contrary, there is a determination on the part of the entire industry to improve gravure and as a result, improve its position in the publication field."

Gravure in the Packaging Field

Carl A. Ireton, The Specialty Papers Co., Dayton, O., spoke on *Gravure Printing in the Packaging Field*. Said Ireton, "The gravure inks used in packaging today are a far cry from those old standbys of the age of short skirts and the Charleston. They are now competitive with the brilliant colors of other forms of printing and if necessary can be odor-free.

Printing Quality

"The illustrations that can be obtained with gravure can be of quality comparable to the best letterpress or offset. We can now provide wrappers and cartons that have tasty looking illustrations of the kind you

Third for Hollingsworth & Whitney—Installation of the third Lawson Electronic Spacer Cutter has been made at the Winslow, Me., mill of Hollingsworth & Whitney Co., a division of Scott Paper Co. Hollingsworth & Whitney produce papers for industrial uses, including printing, food protection, packaging, envelopes and cups.

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School for Paper Salesmen—Carnegie Institute of Technology's School of Printing Management recently held a one week course for members of Riegel Paper Corp.'s sales and production departments. Students are shown learning the operation of a phototypesetting machine. Riegel sponsored the Carnegie course for the second year in succession to help its salesmen learn more about printers' requirements for paper and tympans.

have seen in various magazines and publications. Screens of 150 lines per linear inch are commonly used. This assists in quality and appearance and permits excellent tone gradation and highlight effect. Each color is dry before the next color is put down. This assists in the production of sharp, clean printing. High contrast effect can be obtained inasmuch as heavy solid dots and the lightest of halftone dots can be run from the same engraving and in immediately adjoining areas.

Unlimited Repeat

"In packaging we meet all sizes and shapes. This means the printer must be flexible with respect to size. Rotogravure provides this necessary flexibility. If the packager wants, for example, a wrapper that is 9.037 in. long, he can get it.

Continuous Repeat

"The label or wrapper that is cut from a roll must usually be of continuous repeat. Blank or open spaces cannot be easily handled. The wrapping machines are designed to advance the web by a given amount and to cut off exactly the right amount of wrapper for each package. They cannot accommodate or cut away any nonprint or dead areas such as might be encountered in other kinds of printing.

Instantaneous Drying

"Much of the packaging of today is done on automatic equipment using labels or wrappers in roll form. This means that they must therefore be in roll form, coming off the press. Therefore, there is a definite requirement for immediate drying to avoid offset, sticking and smearing. This is especially true of films and foils.

In-Line Operations

"In some instances gravure has fitted very well into in-line operations. The just mentioned characteristic of instantaneous drying is a very important factor when considering in-line operations. The printed web can be handled immediately after the last print station. It can be scored, punched, died, folded, embossed, or given any other treatment to which a paper web or film might be subjected.

Odorless Printing

"One of the age-old problems in packaging is that of odor of the ink film. In certain types of rotogravure printing, we find inks that are virtually odorless. In others the residual odor is so low that it cannot be detected by most persons. If detectable it may be of such nature that it is not objectionable."

Ireton then went on to list some of the problems of rotogravure.

High Cost of the Press

"A six, seven, or eight color press with all the supplementary equipment, such as drive, drying hoods, air ducts, scanning devices and register control, will run well into the six figure bracket.

Cylinders and Engravings

"The printing plate of the rotogravure process is an engraving on a specially prepared base roll. The cost of these rolls can run from two to five thousand dollars per set. This item of cylinder cost is quite variable, depending on the number of colors, the kind of design and the number of repeats around and across the cylinders. Thus, cost can be reduced through the use of de-mount cylinders. In this method, a cylindrical shell carries the engraving and can be slipped on and off mandrels as the requirements demand.

Proofing and Correcting

"Packages on a shelf must all look as nearly alike as possible. Therefore, each label or wrapper must look like the next. This is not easy, especially if there are several repeats around or across the cylinder and especially if the subject is one of critical

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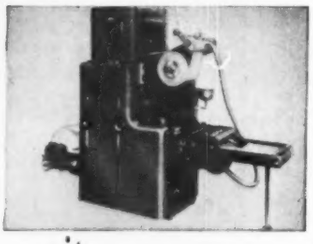

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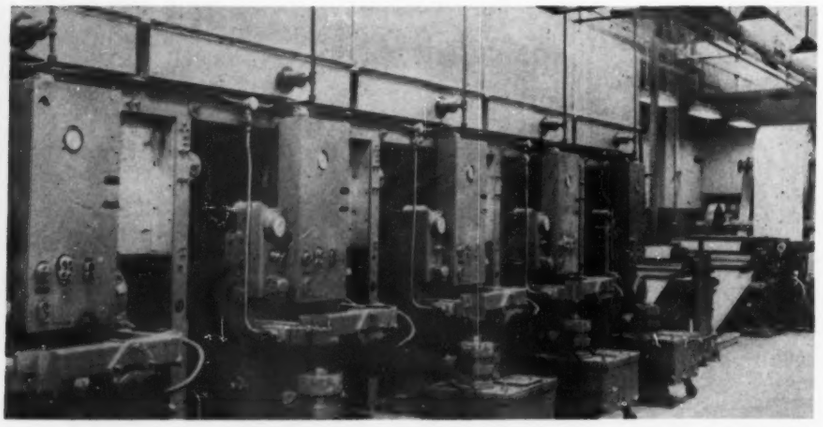
color balance. Even with the best of skill on the part of the engraver and the best of tools and controls, errors creep into the process and result in unevenness from label to label. This means the cylinders must be proofed and corrected. The best but most costly way is to put the cylinders in a press and run them at normal speeds with regular inks. The other is to proof the cylinders one at a time, in a special proving press. This latter method is the one most generally used. Cylinders may have to be corrected two or three times before they are ready to run.

Printing Surface Requirements

"I stated earlier," Ireton continued, "that rotogravure is ideally suited for flexible packing printing. This statement should be qualified to this extent—provided the surface smoothness is suitable for rotogravure printing. In other forms of printing, some adjustments can be made in the ink or in the printing pressure to accommodate the surface deficiencies. This is much more difficult with gravure. It is necessary then to carefully select paper or board with the proper surface for gravure printing. Since foils follow the contour of the surface to which they are mounted, it is necessary to carefully select a base stock having the proper smoothness.

"Having examined these adverse characteristics of gravure, it is easily recognized that this is a process that is not generally fitted for small quantity runs, or where economy is of first importance."



Five Color Rotogravure Press—The Ohio Boxboard Co. plant at Rittman, O., one of the largest folding carton plants in the United States, has completed the installation of a Five Color Staude 1000 Rotogravure Press, manufactured by E. G. Staude Mfg. Co., Inc. Included, as additional equipment, is a Staude Turn-Over Roll Stand, a Staude Butt Splicer and a Mercury Cutter-Creaser. This installation represents the closest approximation of automation in the folding carton industry. The Staude 1000 is designed to handle a web of 45 in. wide over cylinders from 23 in. to 46 in. The press feeds into a Mercury Cutter-Creaser making possible the printing of a variety of shapes, sizes and styles. The Staude, it is said, can be made to print at the rate of 1000 ft. per min. Registration is maintained through General Electric's web tension control system, and G-E tensiometer units are used to coordinate the motor speeds and web tension of each of the separately driven units.

Demolished Engraving Plant in Business Two Weeks Later—When fire destroyed the Scranton Engraving Co., Scranton, Pa., which prepares engravings used in the *Scranton Times*, Chemco Photoproducts Co., Inc. was notified. Chemco representatives measured and checked temporary quarters, advised the company of equipment and supplies needed, recommended a plant layout and provided for necessary electrical hook-up, acid drain and gas lines. Chemco also supplied 12 pieces of major equipment and part of the 83 items of supplies needed. Pictured here is the new plant which was in action two weeks after destruction of the company's original location.

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SEPTEMBER 1955

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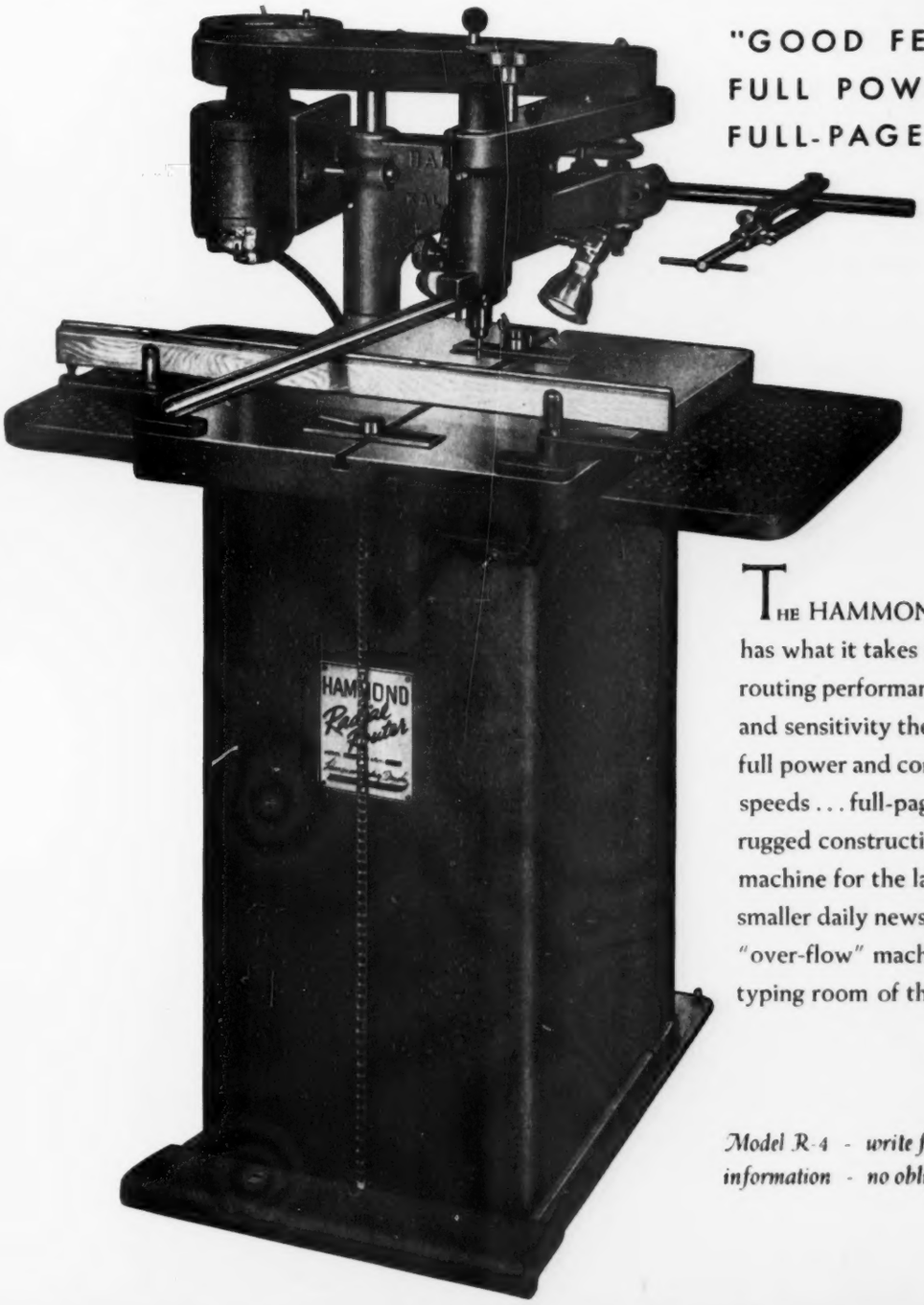

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9 Pt. Imperial with Bold

ABCDEF abcdefghijklmno 12345
ABCDEF abcdefghijklmno 12345

10 Pt. Imperial with Bold

ABCDEFG abcdefghijklmnopqrs 12345
ABCDEFG abcdefghijklmnopqrs 12345

8 Pt. Imperial with Italic

ABCDEFG abcdefghijklmnop 12345
ABCDEFG abcdefghijklmnop 12345

9 Pt. Imperial with Italic

ABCDEFG abcdefghijklmnopqrstuvwx 12345
ABCDEFG abcdefghijklmnopqrstuvwx 12345

8 Pt. De Roos with Italic

ABCDEFG abcdefghijklmnopqrst 12345
ABCDEFG abcdefghijklmnopqrst 12345

10 Pt. De Roos with Italic

ABCDEF abcdefghijklmnop 12345
ABCDEF abcdefghijklmnop 12345

12 Pt. De Roos with Italic

ABCDE abcdefghijklm 12345
ABCDE abcdefghijklm 12345

14 Pt. De Roos with Italic

ABCDEFG abcdefghijklmnopqrst 12345
ABCDEFG abcdefghijklmnopqrst 12345

9 Pt. Bodoni Book with Italic

ABCDEFG abcdefghijklmnopqrstuvwxy 12345
ABCDEFG abcdefghijklmnopqrstuvwxy 12345

7 Pt. Waverley with Italic

ABCDEFGH abcdefghijklmnopqrstuvwxyz 12345
ABCDEFGH abcdefghijklmnopqrstuvwxyz 12345

10 Pt. Vogue Extra Bold Condensed with Oblique

ABCDEF abcdefghijklmnopqrstuv 12345
ABCDEF abcdefghijklmnopqrstuv 12345

12 Pt. Vogue Extra Bold Condensed with Oblique

ABCDEF abcdefghijklmnopq 12345
ABCDEF abcdefghijklmnopq 12345

14 Pt. Vogue Extra Bold Condensed with Oblique

ABCDEFG abcdefghijkl 123
ABCDEFG abcdefghijkl 123

18 Pt. Vogue Extra Bold Condensed with Oblique

ABCD abcdefghij 123
ABCD abcdefghij 123

24 Pt. Vogue Extra Bold Condensed with Oblique

ABCD abcde 234

30 Pt. Vogue Extra Bold Condensed Oblique

AB abcdef 23

36 Pt. Vogue Extra Bold Condensed Oblique

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